

ANSI ECMA 35-2018



## Electrification Systems for Electric Overhead Traveling Cranes



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American National Standard

# Electrification Systems Components for Electric Overhead Traveling Cranes

**Electrification and Controls Manufacturers Association (ECMA)**  
An Industry Group of MHI

Approved July 11, 2018  
**American National Standards Institute, Inc.**

**FOREWORD.** This standard, which was developed under the American National Standards Institute (ANSI) Canvass method and approved by ANSI on July 11, 2018, represents suggested design practices and operational requirements for electrification and controls systems. It was developed by MHI, along with the Electrification and Controls Manufacturers Association ("ECMA"), one of its Industry Groups, and is intended to provide useful information and guidance for owners, users, designers, purchasers or specifiers of material handling equipment or systems. It is advisory only and should only be regarded as a simple tool that its intended audience may or may not choose to follow, adopt, modify, or reject. A standard may be part of, but does not constitute a comprehensive safety program that cannot guard against pitfalls in operating, selecting and purchasing such a system, and should not be relied upon as such. Such a program should be developed by a qualified professional.

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The **Electrification and Controls Manufacturers Association** (ECMA) is comprised of companies that design and manufacture electrical control systems for cranes and material handling equipment. This standard is the result of ECMA's recognition of the need to standardize performance, and design criteria for the proper utilization of electrification systems for electric overhead traveling cranes, and was formulated under MHI procedures approved by ANSI.

This standard represents design, operating and testing practices and performance criteria that may be used in determining product utilization.

On the date of approval of this standard, ECMA consisted of the following member companies:

- Cervis Inc.
- Conductix-Wampfler
- Control Chief Corporation
- HBC-radiomatic Inc.
- IKUSI, USA Inc.
- Laird Controls North America
- Magnetek, Inc.
- Microtronics LLC
- Morris Material Handling, Inc.
- Nedic Industrial Solutions
- Power Electronics International, Inc.
- Powerohm Resistors, Inc.
- Robinson Engineering, Inc.
- Schneider Electric
- TELE RADIO, LLC
- Trans Tech – Power Transfer Systems
- Vahle, Inc.

Questions or suggestions for improvement regarding of this standard are welcome. Suggestions should be sent to: ECMA Committee, MHI, 8720 Red Oak Blvd., Suite 201, Charlotte, NC 28217; [standards@mhi.org](mailto:standards@mhi.org).

# Electrification Systems for Electric Overhead Traveling Cranes

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# Electrification Systems for Electric Overhead Traveling Cranes

## 1 Purpose and Scope

This standard provides minimum requirements and guidelines for alternating current (AC) and direct current (DC) electrification systems for electric overhead, monorail, and gantry traveling cranes.

Electrification systems include:

- conductor bars;
- festoon systems;
- cable chains;
- spring driven reels; and
- motor driven reels.

## 2 Normative References

Parts of this standard refer to certain portions of other applicable specifications or standards. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AIST TR-06, *Specification for EOT Cranes for Steel Mill Service*, 2005 Edition

ASME B30.2-2011, *Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder Top Running Trolley Hoist)*

CMAA 70, *Specification for Top Running Bridge & Gantry Type Multiple Girder Electric Overhead Traveling Cranes*

CMAA 74, *Specifications for Top Running Bridge & Under Running Single Girder Electric Overhead Traveling Cranes Utilizing Under Running Trolley Hoist*

Article 610 of the National Electrical Code

NEMA Standards publication ICS6 classifications

IEC 60529-2004, *Degrees of Protection Provided by Enclosures (IP Code)*

## 3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply. Definitions are shown in alphabetical order except when used in another definition.

### 3.1

#### **bridge conductors**

the electrical conductors located along the bridge structure of a crane to provide power to the trolley

### 3.2

#### **runway conductors**

the main conductors mounted on or parallel to the runway which supplies power to the crane

### 3.3

#### **festoon system**

a mechanical system consisting of a guiding support with multiple rolling carriers used to manage the movement of electrical power and/or control cable or hose from a stationary point to the moving equipment