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Application Guide for AC Adjustable Speed Drive Systems

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Foreword

This guide was developed by the Motor and Generator Section and the Industrial Automation Control Products and Systems Section and approved for publication as an application guide of the National Electrical Manufacturers Association. This guide is intended to assist users in the proper selection and application of AC adjustable speed drive systems. The guide is revised periodically to provide for changes in user needs, advances in technology, and changing economic trends. All persons having experience in the selection, use, or manufacture of electric motors and adjustable speed drives are encouraged to submit recommendations that will improve the usefulness of this guide. Inquiries, comments, and proposed or recommended revisions should be submitted to the Motor and Generator Section and the Industrial Automation Control Products and Systems Section by contacting:

NEMA Technical Operations Department
National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

The best judgment of the Motor and Generator Section and the Industrial Automation Control Products and Systems Section on the performance and construction of adjustable speed drive systems is represented in this guide. The guide is based upon sound engineering principles, research, and records of test and field experience. Also involved is an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience. For systems intended for general applications, the individual companies through normal commercial contact determined information as to user requirements. Practical information concerning performance, safety, test, construction, and manufacture of adjustable speed drive systems is provided in this guide.

In the preparation and revision of these standards, consideration has been given to the work of other organizations whose standards are in any way related to adjustable speed drive systems. Credit is hereby given to all whose standards may have been helpful in the preparation of this volume.

This application guide was developed jointly by the Industrial Automation Control Products and Systems Section and the Motor and Generator Section. Section approval of the guide does not necessarily imply that all section members voted for its approval or participated in its development. At the time this guide was approved, the Industrial Automation Control Products and Systems Section was composed of the following members:

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Section 1

Scope

This guide covers AC electrical drive systems, rated 600 volts or less, consisting of three-phase induction motors, voltage-source pulse-width modulated adjustable frequency controls, and associated components. The guide addresses common issues that should be considered in the selection of drive system components and the installation and application of the drive system.