STANDARDS PUBLICATION NO. MW 770

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Unified Customer Labeling for Magnet Wire Products

NEMA

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ■ 2101 L STREET, N.W., WASHINGTON, D.C. 20037

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NEMA STANDARDS PUBLICATION NO. MW 770-1992

UNIFIED CUSTOMER LABELING FOR MAGNET WIRE PRODUCTS

Published by
National Electrical Manufacturers Association
2101 L Street, NW
Washington, DC 20037-1526

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Foreword

Magnet wire manufacturers deal with many original equipment manufacturers who use bar code data for record keeping, data input at receiving points, and stock room transactions. Many of these customers have established specifications for product data in bar code form that must be applied to wire reels and cartons.

In 1989 the NEMA Wire and Cable Division determined that there was a need to develop a standard for the use of product identification and bar coding systems in the wire and cable industry. The Division developed a bar code standard covering building wire and insulated wire and cable products in 1991.

Because of the unique requirements for marking, the Wire and Cable Division bar code standard does not meet the needs of the magnet wire industry. This document was created to fill that need. It provides the ability to process magnet wire products in the most efficient manner and is in alignment with current and future needs of the industry.

This standard is not intended to conflict with those standards already in place. The information has been thoroughly reviewed by all magnet wire manufacturers in production at the time of publication. The issuance or existence of this standards publication does not, in any respect, prevent or restrict any member or non-member of NEMA from using labeling practices or bar code symbologies not in conformance with its contents.

This publication was developed by the NEMA Magnet Wire Section, which periodically reviews it for any revisions necessary to keep it up to date with changes in technology. Comments or proposed revisions are welcome and should be submitted to:

Vice President, Engineering
National Electrical Manufacturers Association
2101 L Street, N.W., Suite 300
Washington, D.C. 20037-1526

Scope

This standard applies only to magnet wire products. It provides guidelines for size of printing, format, data items, and the application of data labels to magnet wire reels and cartons. It does not apply to the wire manufacturer's primary product label. It covers only the secondary label needed to provide customers with data needed for efficient capture of data for warehouse input and output, receiving, and other inventory controls.

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Section 1

REFERENCES

1.1 This standard adopts the following publications, in whole or in part. These references are available from the specified sources.

Automated Identification Manufacturers
1326 Freeport Road
Pittsburgh, PA 15238

Uniform Symbology Specification Manual for Code 39-1986

Automotive Industry Action Group
North Park Plaza, Suite 830
17117 West Nine Mile Road
Southfield, MI 48075

AIAG-B-1-1988 *Bar Code Symbology*
AIAG-B-3-1990 *Shipping Parts Identification Label*

Federation of Automated Coding Technologies
1326 Freeport Road
Pittsburgh, PA 15238

FACT-1, 1989 *FACT Data Identifier Standard*

American National Standards Institute
11 West 42nd Street
New York, NY 10036

ANSI X12.3-1986 *Standards for Electronic Data Communication*

National Electrical Manufacturers Association
2101 L Street, N.W., Suite 300
Washington, D.C. 20037

Electrical Industry Bar Code Application Guidelines—1987

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Section 2

DEFINITIONS

2.1 For definitions refer to NEMA *Electrical Industry Bar Code Applications Guidelines.*

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Section 3

BAR CODE SYMBOLOGY—CODE 39

3.1 The Automated Indentification Manufacturers (AIM) Uniform Symbol Specification for Code 39-1986 shall be used for all bar coded data on magnet wire products.

3.2 The four characters '$,' '/,' '+,' '%,' of the symbology shall not be used on the identification label.

3.3 For each bar code symbol the average width of the narrow elements shall be within the range of .013 to .017 inch (0.33mm to 0.43mm). The ratio of the nominal width of the wide elements to the nominal width of the narrow elements shall be 3:1, with an allowable range of 2.8:1 to 3.2:1.

3.4 Check digits shall not be added in the bar code.

3.5 The printed bar code symbol shall meet the reflectivity and contrast requirements specified in Section 4.1 of AIAG-B-1.

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Section 4

SECONDARY LABEL PLACEMENT

4.1 Labels on reels shall be placed on the reel wrapper. The secondary identification label shall be at least one inch from the supplier's primary product label.

4.2 Labels on cartoned products shall be placed on the front of the carton at least one inch from any other bar coded label. The front of the carton shall be considered the side with the supplier's logo and primary label.

4.3 If label protection is applied to the label a method of protection shall be used that allows the data to be scanned with contact and non-contact devices.

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Section 5

LABEL SIZE AND MATERIALS

5.1 The label shall be 4.0 inches (102 mm) high by 6.0 inches (152 mm) long. This size will accommodate all known conditions such as long part numbers.

5.2 Label paper shall be white in color with black printing.

5.3 Pressure sensitive adhesive backed labels are recommended. Other types of labels are acceptable as long as adherence to the carton or wrapper is wrinkle free.

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Section 6

DATA AREA CHARACTERISTICS

6.1 Almost any type of data can be encoded using Code 39 symbology. The Magnet Wire Section has identified the data fields that shall be required and permits optional data fields.

6.2 The magnet wire industry endorses the use of all data identifiers (DI) developed by the Federation of Automated Coding Technology (FACT). The FACT DI indicates the general category of intended use of the data that follows.

6.3 A FACT DI shall be at the beginning of each field. This character is not to be included in the human readable line, but is shown in human readable characters under the title for the appropriate area.

6.4 The customer part number, quantity, and supplier number shall be included on each label in the designated areas and shall be displayed in both human readable characters and bar code symbology. Data characters shall be as follows:

Part number: Not to exceed 5.5 inches (140 mm).
Quantity: Six characters, plus Data Identifier.
Supplier: Nine characters, plus Data Identifier.

6.5 Special data items such as serial number and purchase order number may be added.

6.6 Each data area shall be separated by thin lines and shall contain its title in the upper left hand corner (Figure 6-1). Titles shall be printed in 0.06 inch (1.52 mm) high letters.

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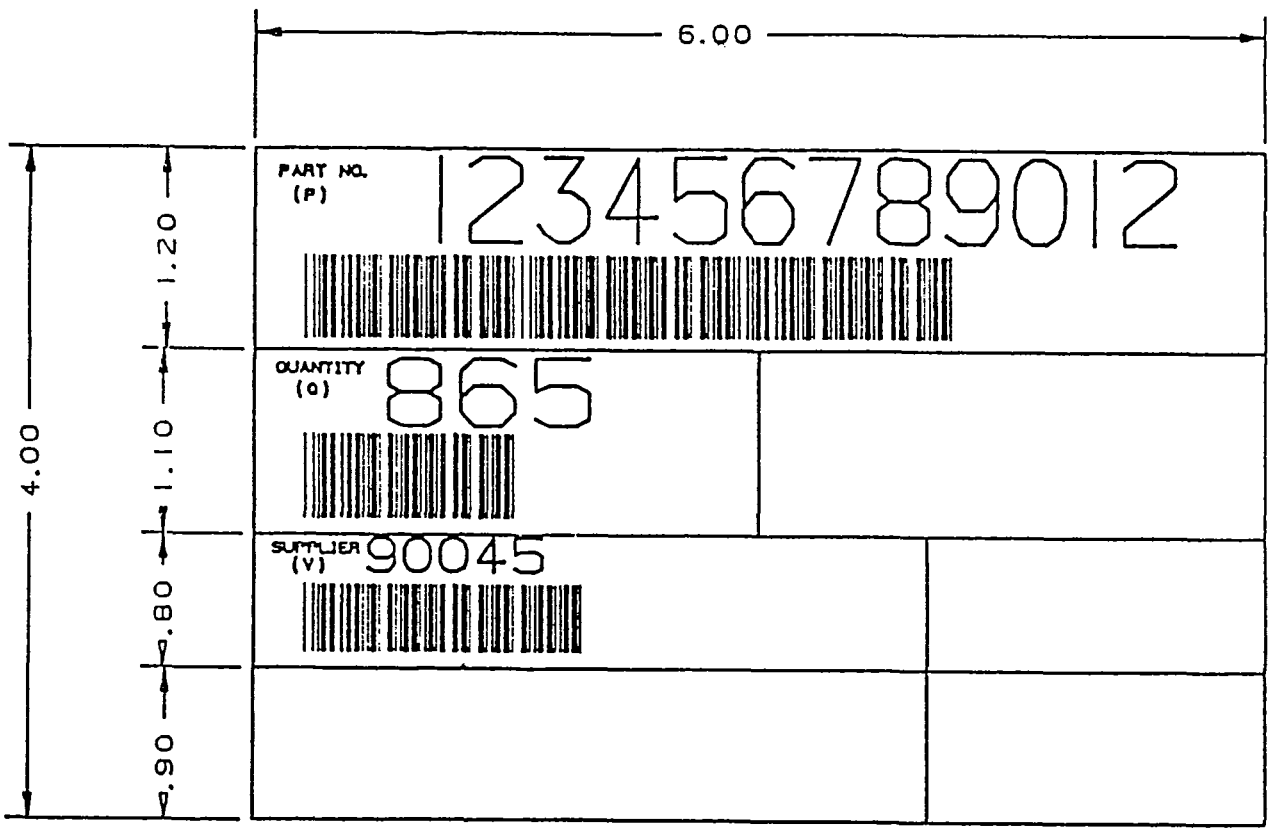


Figure 6-1
DATA AREA CHARACTERISTICS

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Section 7

LABEL FORMAT

7.1 Each data item shall contain human readable and bar code data.

7.2 The bar code symbol shall be directly below the human readable characters and shall be a minimum of 0.4 inches (10.16 mm) in height.

7.3 Human readable characters shall be bold, with the following heights:

Part number: 0.4 inches (10.16 mm).
Quantity: 0.4 inches (10.16 mm).
Supplier: 0.2 inches (5.08 mm).

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Section 8

PALLET SUMMARY LABEL

8.1 A Pallot Summary Label, also known as a Master Label, Figure 8-1, should be used when the supplier and customer agree that the total contents of a multiple, common item pack should be identified. The total multiple pack should be identified with a master label in a location specified by the customer.

8.2 At the top of this label, the heading "Master Label" should be printed in bold one inch (25.4 mm) letters. This may be a separate label applied above the standard 6 inch (152mm) by 4 inch (102 mm) unified pallet label. The balance of the label format should conform to the specifications for Sections 3, 5, 6, and 7 except that the data identifier for the serial number shall be "M" instead of "S."



Figure 8-1
MASTER LABEL

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Appendix A

FACT DI

A.1 Table A-1 shows Magnet Wire Section interpretations of some Federation of Automated Coding Technologies Data Identifiers (FACT DI) as they pertain to magnet wire products.

Table A-1
INTERPRETATIONS OF SOME FACT DIs

Data Identifier	Definition
K	Order Number—assigned by customer to identify a purchasing transaction, for example, purchase order number
P	Item identification code assigned by customer
C	Continuation of Item Code
Q	Quantity
7Q	Quantity followed by two characters of ANSI X12.3 Data Element Number 355, for example, KG for kilograms
S	Unique package identification assigned by supplier (lowest level of packaging which has a package ID code—should contain like items)
V	Supplier code assigned by customer
M	Sequential serial number—master label

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NEMA STANDARDIZATION BACKGROUND

The purpose of NEMA Standards, their classification, and status are set forth in certain clauses of the NEMA *Standardization Policies and Procedures* manual and are referenced below:

Purpose of Standards

National Electrical Manufacturers Association Standards are adopted in the public interest and are designed to eliminate misunderstandings between the manufacturer and the purchaser and to assist the purchaser in selecting and obtaining the proper product for their particular needs. Existence of a National Electrical Manufacturers Association Standard does not in any respect preclude any member or nonmember from manufacturing or selling products not conforming to the standard.

(Standardization Policies and Procedures, p. 1)

Definition of a Standard

A Standard of the National Electrical Manufacturers Association defines a product, process or procedure with reference to one or more of the following: nomenclature, composition, dimensions, tolerances, safety, operating characteristics, performance, rating, testing, and the service for which they are designed.

(Standardization Policies and Procedures, p. 2)

Dimensions

Where dimensions are given for interchangeability purposes, alternate dimensions satisfying the other provisions of the Standards Publication may be capable of otherwise equivalent performance.

(Standardization Policies and Procedures, p. 8)

Categories of Standards

National Electrical Manufacturers Association Standards are of three classes, which have received the affirmative vote of at least two-thirds of the Subdivision votes cast in the affirmative or negative:

1. NEMA Standard, which relates to a product, process, or procedure commercially standardized and subject to repetitive manufacture.
2. Suggested Standard for Future Design, which may not have been regularly applied to a commercial product, but which suggests a sound engineering approach to future development.
3. Adoptive Standard, which is adopted in whole or in part from the standards of another organization, either domestic, regional, or international.

(Standardization Policies and Procedures, pp. 7 & 16)

Authorized Engineering Information

Authorized Engineering Information consists of explanatory data and other engineering information of an informative character not falling within the classification of NEMA Standard or Suggested Standard for Future Design, which standard has received the affirmative vote of at least two-thirds of the Subdivision votes cast in the affirmative or negative.

(Standardization Policies and Procedures, pp. 7 & 16)

Identification of Status

Standards in NEMA Standards Publications are identified as "NEMA Standard," "Suggested Standard for Future Design," or "Adoptive Standard." These indicate the status of the standard. A statement incorporating the auxiliary verb "shall" indicates that compliance with a requirement is mandatory for compliance with the standard. These classes of standards are identified in the foreword or throughout the text.

The material identified as "Authorized Engineering Information" is designated similarly. Statements incorporating other auxiliary verbs such as "should," "may," etc. refer to authorized engineering information and not to procedures required for compliance with the standard.

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MAGNET WIRE SECTION
OF THE
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Member Companies

Alcatel Canada Wire Inc.
Magnet Wire Group
La Grange, KY 40031

American Wire Corporation
Sandy Hook, CT 06482

Elektrisola, Inc.
Boscawen, NH 03303

Magnatek Lighting Products
Gallman, MS 39077

Phelps Dodge Magnet Wire Company
Fort Wayne, IN 46801

Southwire Specialty Products
Osceola, AR 72370

Westinghouse Electric Corporation
Abingdon, VA 24210

The Bridgeport Insulated Wire Company
Bridgeport, CT 06610

Chicago Magnet Wire Corporation
Elk Grove Village, IL 60007

Essex Group, Inc.
Industrial Products Division
Fort Wayne, IN 46801-1510

Optec D D USA Inc.
St. Louis, MO 63139

Rea Magnet Wire Company, Inc.
Fort Wayne, IN 46896

SPD Magnet Wire Company
Edmonton, KY 42129

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