DC 2-82 6470247 0006600 0 A-37-23

NEMA STANDARDS PUBLICATION NO. DC 2

nema

# Residential Controls — Quick Connect Terminals

NEMA

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

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

DC 2-82 6470247 0006601 2

**NEMA DC 2-1982 (R 1988)**

# DC 2

## *RESIDENTIAL CONTROLS—QUICK CONNECT TERMINALS*

*Published by*

**National Electrical Manufacturers Association**
2101 L Street, N. W.
Washington, DC 20037

©1989 by National Electrical Manufacturers Association

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

# TABLE OF CONTENTS


FOREWORD . . . . . i
SCOPE . . . . . i
HISTORY OF STANDARDS . . . . . ii

**Section 1** REFERENCED STANDARDS AND DEFINITIONS
Referenced Standards . . . . . 1
Definitions . . . . . 2

**Section 2** RATINGS, MATERIALS AND FINISH
Rating . . . . . 3
Materials . . . . . 3
Finish . . . . . 3

**Section 3** DIMENSIONS
Dimensions of Male Tabs . . . . . 4
Dimensions of Dimple Detents . . . . . 6
Dimensions of Hole Detents . . . . . 6

**Section 4** PERFORMANCE
General . . . . . 9
Current-Carrying Ability . . . . . 9
Voltage Drop Test . . . . . 9
Alternate Dimensions . . . . . 9


Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

## Foreword

This Standards Publication represents a basic standard for the dimensional construction of flat quick-connect terminal tabs and the performance characteristics of female connectors when tested with special flat quick-connect test tabs. It has been developed in the public interest and is designed to promote a better understanding between the manufacturer and the user by providing for direct interchangeability through industry standardization.

These standards are periodically reviewed by the Residential Controls Section of NEMA for any revisions necessary to keep them up to date with advancing technology. Proposed or recommended revisions should be submitted to:

Manager, Engineering Department
National Electrical Manufacturers Association
2101 L Street, N.W.
Washington, D.C. 20037.

## Scope

This Standards Publication covers the dimensional construction of interchangeable flat quick-connect terminal tabs for general purpose interconnections in residential controls and similar use and the performance characteristics of female connectors when tested with special flat quick-connect test tabs representing the above.



Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

## History of Standards

The Residential Controls Section of NEMA (formerly the Automatic Temperature Controls Section) was formed in 1940 to promote the standardization of products within the scope of this Section. These product standards cover definitions, ratings, performance, testing, and dimensions. NEMA Standards are voluntary and are designed to eliminate misunderstandings between the purchaser and the manufacturer.

This publication is one of a series sponsored by the Residential Controls Section. Other publications in this series are identified as Pub. No. DC ____ (followed by the calendar year the publication was adopted).

There is no evidence of the existence of standards for quick-connect terminals prior to 1959. In 1959, the Automatic Temperature Controls Section of NEMA developed the first standard which was limited in coverage to dimensions. From 1963 to 1969, the Section worked with industry to establish standards for performance as well as to expand the construction standards.

In 1969, this work was transferred to a NEMA Joint Sections Committee for completion as general-purpose standards. This Joint Sections Committee consisted of the Automatic Temperature Controls Section (now the Residential Controls Section), the Electrical Connector Section, the Industrial Control and Systems Section, the Motor and Generator Section, and the Wiring Device Section, as well as representatives from AMP, Inc., Ark-Les Switch Corporation, and the Thomas & Betts Company. Publication No. DC 2-1970 was the result of the work of this Joint Sections Committee.

The 1982 edition was made by the Residential Controls Section, Subcommittee No. 2, with the participation of all known connector manufacturers who were interested. It represented the refinement of previous standards and included new terminals which had appeared during the previous years.

This 1982 (R1988) edition is a reaffirmation of the 1982 edition with minor editorial revisions, and it also includes information on alternate dimensions.



Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

# SECTION 1
# REFERENCED STANDARDS AND DEFINITIONS

## 1.1 REFERENCED STANDARDS

The following publications are adopted, in whole or in part as indicated, by reference in this Standards Publication and are available from the sources indicated.

**American National Standards Institute**
1430 Broadway
New York, NY 10018

ANSI/UL 310-1985 — *Electrical Quick-Connect Terminals*

**American Society for Testing & Materials**
1916 Race Street
Philadelphia, PA 19103

ASTM E18-1987 — *Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials*

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

## 1.2 DEFINITIONS

### 1.2.1 Quick-Connect Wiring Termination

An electrical connection consisting of a male tab and female connector which are readily engaged without the use of tools.

NEMA Standard 7-14-1976.

### 1.2.2 Test Tab

A tab manufactured to close tolerances for the specific purpose of conducting mechanical, electrical and temperature rise tests with production connectors. Double-ended test tabs shall be used for electrical and temperature rise tests and single-ended test tabs for mechanical tests. Test tabs are used in order to provide an accurate base for test measurements.

NEMA Standard 7-14-1976.

### 1.2.3 Male Tab

That portion of a quick-connect wiring termination which receives the female connector, hereinafter referred to as the "tab."

NEMA Standard 7-15-1970.

### 1.2.4 Female Connector

That portion of a quick-connect wiring termination which is pushed onto the tab, hereinafter referred to as the "connector."

NEMA Standard 7-15-1970.

### 1.2.5 Detent

A dimple (depression) or hole in the tab which acts to engage a raised portion on the connector, thus providing a retaining means for the mating parts.

NEMA Standard 7-14-1976.

### 1.2.6 Reference Point

A specially marked point used when making electrical test measurements.

NEMA Standard 7-15-1970.

### 1.2.7 Burr

An extraneous protrusion in the stock, not considered an integral functional part of the tab.

NEMA Standard 7-14-1976.

### 1.2.8 C26000 Alloy

A copper-zinc alloy consisting of approximately 70 percent copper and 30 percent zinc (cartridge brass) as specified by the Copper Development Association.

NEMA Standard 7-14-1976.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

# SECTION 2
# RATINGS, MATERIALS, AND FINISH

## 2.1 RATINGS

The electrical values given in Table 4-1 are for test purposes only. Specific ratings shall be governed by application.

NEMA Standard 7-14-1976.

## 2.2 MATERIALS

Production connectors shall be composed of copper alloys.

Production tabs shall be composed of copper alloys or plated ferrous materials. Other materials meeting the performance requirements of DC 2 are allowed for production tabs.

Test tabs shall be composed of C26000 Alloy with a hardness of 62 ± 7 on the Rockwell 30T scale.

NEMA Standard 11-17-1988.

## 2.3 FINISH

Production connectors shall be plain or plated. Copper alloy production tabs shall be plain or plated. Ferrous production tabs shall be plated unless a corrosion-resistant alloy is used.

NEMA Standard.11-17-1988.

Exception: After shearing, a formed tab provided on a continuous strip and intended to be fed into a tool for crimping and separating from the strip need not be plated on the edge of the tab where it was attached to the strip.

Authorized Engineering Information 11-17-1988.

Test tabs shall be plain for mechanical tests and plain or tin plated for electrical tests.

NEMA Standard 11-17-1988.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

# SECTION 3
# DIMENSIONS

## 3.1 DIMENSIONS OF MALE TABS

Dimensions of male tabs shall be as shown in Figure 3-1 and Table 3-1A (in inches) or Table 3-1B (in millimeters).

All portions of the tab shall be flat (0.010 inch/inch; 0.010 mm/mm) and free from objectionable burrs (no greater than 10 percent of tab thickness) or raised plateaus, except that there shall be permitted to be, in an area 0.050 inch (1.3 mm) surrounding the detent, a raised plateau over the stock thickness of 0.001 inch (0.03 mm) per side.

Dimensional measurements shall not include plating, burrs, or flatness tolerance.

Test tabs shall be dimensioned as shown in Table 3-1A or Table 3-1B except that the "C" dimension tolerance shall be ±0.0003 inch (0.008 mm) for brass and ±0.0005 (0.013 mm) for steel and raised plateaus around detent shall be limited to a total of 0.001 inch (0.03 mm) for both sides.

No obstructions are permitted within 0.045 inch of the direction of K.

If the detent is located from the shoulder, it shall be located on the tab by dimension "E2." If no shoulder is used, the detent shall be located on the tab by dimension "E1."

Figure 3-2 shows dimensions of dimple detents and Figure 3-3 provides dimensions of hole detents.

NEMA Standard 11-17-1988.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

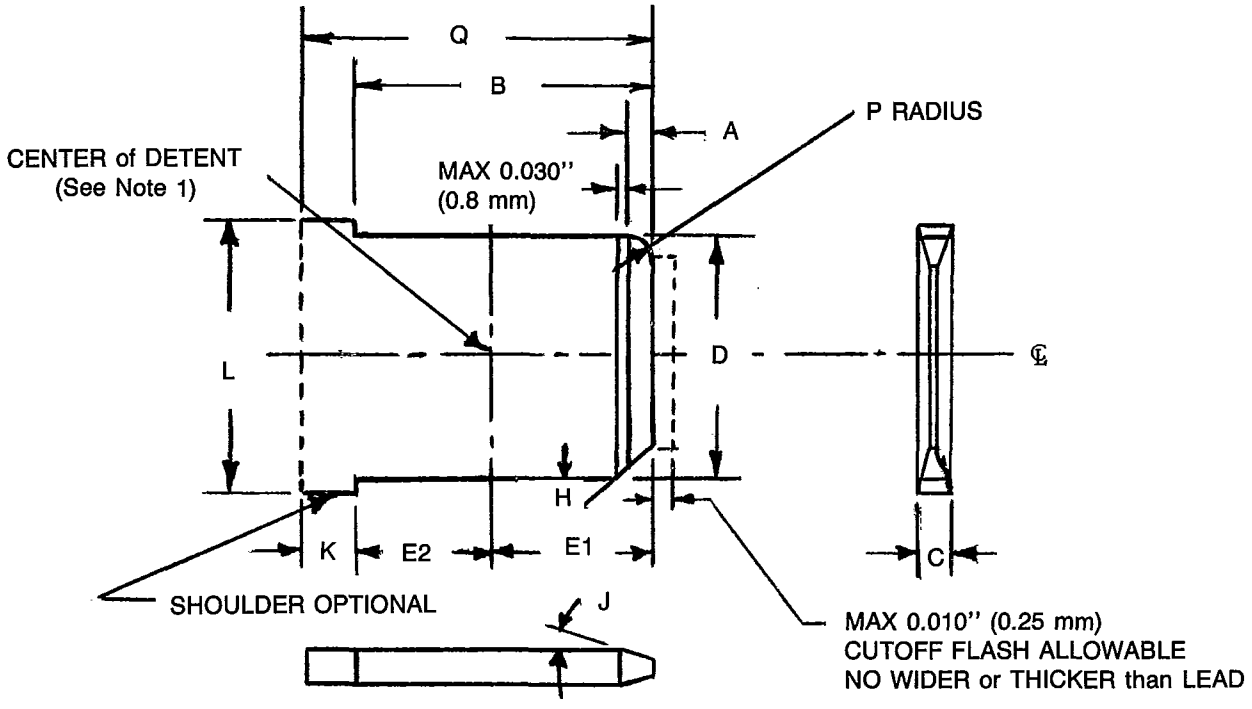



**Figure 3-1**
**DIMENSIONS OF MALE TABS**

Note 1—For detent and hole dimensions F, G, M, and N, see Figures 3-2 and 3-3 and Tables 3-1A and 3-1B.

Note 2—Bevel "H" need not be a straight line if it is within the confines shown, or it may be a radius of "P."

Note 3—"Q" dimension is for tabs without shoulders.

Note 4—"L" dimension is not specified.

(These notes have been approved as Authorized Engineering Information—11-17-1988.)

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

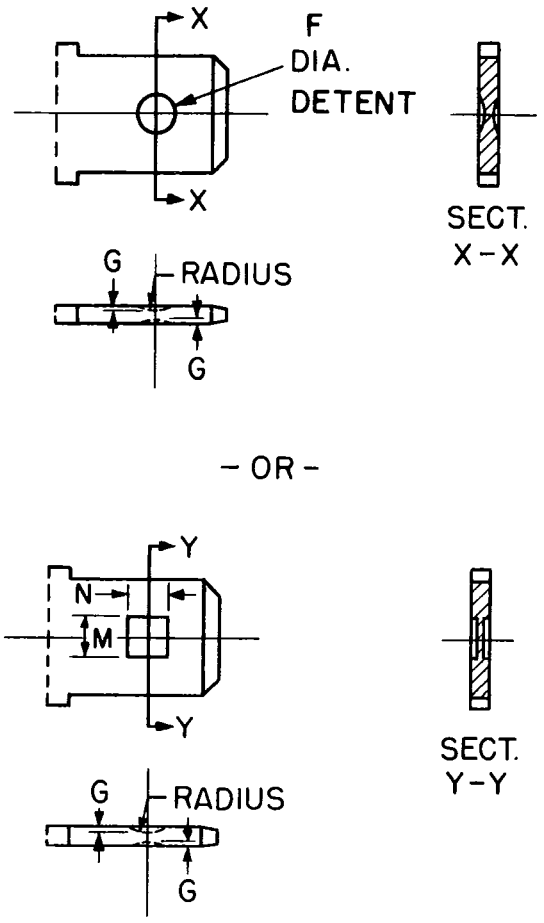



**Figure 3-2**
**DIMENSIONS OF DIMPLE DETENTS**

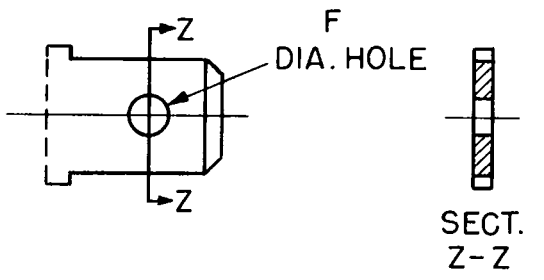



**Figure 3-3**
**DIMENSIONS OF HOLE DETENTS**

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS



## Dimensions of Male Tabs
### Table 3-1A (in inches)

| Nominal Size | A ±.005 | B min. | C ±.001 | D ±.003 | E1 ±.008 | E2 ±.003 | F | G min. | H approx. | J ±2° | K min. | M ±.005 | N ±.005 | P ±.020 | Q min. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.250 x 0.032 with dimple | .035 | .307 | .032 | .250 | .152 | .160 | .070 +.010 −.005 | .003 | 45° | 10° | .045 | .093 | .075 | .050 | .352 |
| 0.250 x 0.032 with hole | .035 | .307 | .032 | .250 | .178 | .134 | .070 +.010 −.005 | ... | 45° | 10° | .045 | ... | ... | .050 | .352 |
| 0.205 x 0.032 with dimple | .035 | .245 | .032 | .207 | .100 | .150 | .070 ±.005 | .003 | 45° | 10° | .045 | .093 | .075 | .050 | .290 |
| 0.205 x 0.032 with hole | .035 | .245 | .032 | .207 | .125 | .125 | .070 ±.005 | ... | 45° | 10° | .045 | ... | ... | .050 | .290 |
| 0.205 x 0.020 with hole | .035 | .245 | .020 | .207 | .125 | .125 | .070 ±.005 | ... | 45° | 10° | .045 | ... | ... | .045 | .290 |
| 0.187 x 0.032 with dimple | .035 | .245 | .032 | .187 | .100 | .150 | .055 ±.005 | .003 | 45° | 10° | .045 | .062 | .054 | .050 | .290 |
| 0.187 x 0.032 with hole | .035 | .245 | .032 | .187 | .125 | .125 | .055 ±.005 | ... | 45° | 10° | .045 | ... | ... | .050 | .290 |
| 0.187 x 0.020 with dimple | .030 | .245 | .020 | .187 | .100 | .150 | .055 ±.005 | .003 | 45° | 10° | .045 | .062 | .054 | .045 | .290 |
| 0.187 x 0.020 with hole | .030 | .245 | .020 | .187 | .125 | .125 | .055 ±.005 | ... | 45° | 10° | .045 | ... | ... | .045 | .290 |
| 0.125 x 0.032 with dimple or hole | .020 | .275 | .032 | .125 | .062 | .218 | .048 ±.003 | .003 | 45° | 10° | .045 | .062 | .048 | .035 | .320 |
| 0.125 x 0.020 with dimple or hole | .020 | .275 | .020 | .125 | .062 | .218 | .048 ±.003 | .003 | 45° | 10° | .045 | .062 | .048 | .035 | .320 |
| 0.110 x 0.032 with dimple or hole | .020 | .275 | .032 | .110 | .062 | .218 | .048 ±.003 | .003 | 45° | 10° | .045 | .062 | .048 | .035 | .320 |
| 0.110 x 0.020 with dimple or hole | .020 | .275 | .020 | .110 | .062 | .218 | .048 ±.003 | .003 | 45° | 10° | .045 | .062 | .048 | .035 | .320 |

Note: Hole or dimple detents may be at the same location on the longitudinal centerline if no shoulder or obstruction is present at the base of the tab. (This note has been approved as Authorized Engineering Information.)

Not for Resale

NEMA DC*2 82 ■ 6470247 0506617 063 ■

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS

Not for Resale

NEMA DC*2 82 ■ 6470247 0509618 TTT ■

## Dimensions of Male Tabs
### Table 3-1B (in millimeters)

| Nominal Size | A | B min. | C | D | E1 | E2 | F | G min. | H approx. | J ±2° | K min. | M | N | P | Q min. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.4 x 0.8 with dimple | 1.08 | | .838 | 6.43 | 4.06 | 4.14 | 2.03 | | | | | 2.50 | 2.03 | 1.78 | |
| | .762 | 7.80 | .787 | 6.27 | 3.66 | 3.99 | 1.65 | .076 | 45° | 10° | 1.14 | 2.24 | 1.78 | 0.76 | 8.94 |
| 6.4 x 0.8 with hole | 1.08 | | .838 | 6.43 | 4.72 | 3.48 | 2.03 | ... | | | | | | 1.78 | |
| | .762 | 7.80 | .787 | 6.27 | 4.32 | 3.33 | 1.65 | | 45° | 10° | 1.14 | ... | ... | 0.76 | 8.94 |
| 5.2 x 0.8 with dimple | 1.08 | | .838 | 5.33 | 2.74 | 3.89 | 1.90 | | | | | 2.50 | 2.03 | 1.78 | |
| | .762 | 6.22 | .787 | 5.18 | 2.34 | 3.73 | 1.65 | .076 | 45° | 10° | 1.14 | 2.24 | 1.78 | 0.76 | 7.37 |
| 5.2 x 0.8 with hole | 1.08 | | .838 | 5.33 | 3.38 | 3.25 | 1.90 | ... | | | | | | 1.78 | |
| | .762 | 6.22 | .787 | 5.18 | 2.97 | 3.10 | 1.65 | | 45° | 10° | 1.14 | ... | ... | 0.76 | 7.37 |
| 5.2 x 0.5 with hole | 1.08 | | .533 | 5.33 | 3.38 | 3.25 | 1.90 | ... | | | | | | 1.65 | |
| | .762 | 6.22 | .483 | 5.18 | 2.97 | 3.10 | 1.65 | | 45° | 10° | 1.14 | ... | ... | 0.64 | 7.37 |
| 4.8 x 0.8 with dimple | 1.08 | | .838 | 4.83 | 2.74 | 3.89 | 1.52 | | | | | 1.70 | 1.50 | 1.78 | |
| | .762 | 6.22 | .787 | 4.67 | 2.34 | 3.73 | 1.27 | .076 | 45° | 10° | 1.14 | 1.45 | 1.24 | 0.76 | 7.37 |
| 4.8 x 0.8 with hole | 1.08 | | .838 | 4.83 | 3.38 | 3.25 | 1.52 | ... | | | | | | 1.78 | |
| | .762 | 6.22 | .787 | 4.67 | 2.97 | 3.10 | 1.27 | | 45° | 10° | 1.14 | ... | ... | 0.76 | 7.37 |
| 4.8 x 0.5 with dimple | .889 | | .533 | 4.83 | 2.74 | 3.89 | 1.52 | | | | | 1.70 | 1.50 | 1.65 | |
| | .635 | 6.22 | .483 | 4.67 | 2.34 | 3.10 | 1.27 | .076 | 45° | 10° | 1.14 | 1.45 | 1.25 | 0.64 | 7.37 |
| 4.8 x 0.5 with hole | .889 | | .533 | 4.83 | 3.38 | 3.25 | 1.52 | ... | | | | | | 1.65 | |
| | .635 | 6.22 | .483 | 4.67 | 2.97 | 3.10 | 1.27 | | 45° | 10° | 1.14 | ... | ... | 0.64 | 7.37 |
| 3.2 x 0.8 with dimple or hole | .635 | | .838 | 3.25 | 1.78 | 5.61 | 1.30 | | | | | 1.70 | 1.35 | 1.40 | |
| | .381 | 6.98 | .787 | 3.10 | 1.37 | 5.46 | 1.14 | .076 | 45° | 10° | 1.14 | 1.45 | 1.09 | 0.38 | 8.13 |
| 3.2 x 0.5 with dimple or hole | .635 | | .533 | 3.25 | 1.78 | 5.61 | 1.30 | | | | | 1.70 | 1.35 | 1.40 | |
| | .381 | 6.98 | .483 | 3.10 | 1.37 | 5.46 | 1.14 | .076 | 45° | 10° | 1.14 | 1.45 | 1.09 | 0.38 | 8.13 |
| 2.8 x 0.8 with dimple or hole | .635 | | .838 | 2.87 | 1.78 | 5.61 | 1.30 | | | | | 1.70 | 1.35 | 1.40 | |
| | .381 | 6.98 | .787 | 2.72 | 1.37 | 5.46 | 1.14 | .076 | 45° | 10° | 1.14 | 1.45 | 1.09 | 0.38 | 8.13 |
| 2.8 x 0.5 with dimple or hole | .635 | | .533 | 2.87 | 1.78 | 5.61 | 1.30 | | | | | 1.70 | 1.35 | 1.40 | |
| | .381 | 6.98 | .483 | 2.72 | 1.37 | 5.46 | 1.14 | .076 | 45° | 10° | 1.14 | 1.45 | 1.09 | 0.38 | 8.13 |

Note: Hole or dimple detents may be at the same location on the longitudinal centerline if no shoulder or obstruction is present at the base of the tab. (This note has been approved as Authorized Engineering Information.)

# SECTION 4
# PERFORMANCE

## 4.1 GENERAL

Test specimens, engagement-disengagement, crimp strength, and the temperature rise test shall be in accordance with ANSI/UL 310.

NEMA Standard 11-17-1988.

Information on source of supply or construction of a device for testing engagement and disengagement forces may be obtained from the staff executive of the Residential Controls Section of NEMA.

Authorized Engineering Information 11-17-1988.

## 4.2 CURRENT-CARRYING ABILITY

Terminations meeting engagement and disengagement requirements according to ANSI/UL 310, shall also be subjected to the temperature rise test according to ANSI/UL 310 and a voltage drop test according to 4.3.

Ten new connectors shall be prepared for these tests in the following manner:

Connectors shall be crimped in a normal manner on each end of a 6-1/2 inch length of tin-plated copper wire having 1/32 inch of polyvinylchloride insulation. The wire size(s) used shall be as specified by the terminal manufacturer for use with the termination. Ten new samples are required for each wire size to be tested. A 1/4 inch section in the center of the lead assembly shall be stripped and soldered with 60/40 solder. Reference points (spots) shall be marked on each double-ended tab in the position shown in Figure 4-1.

Each test connector shall be equipped with a No. 30 AWG iron-constantan thermocouple placed as shown in Figure 4-1. At least 1-inch of the thermocouple wire shall be bound to the test lead by means of thread binding, a small amount of solder or welding.

Specimens shall be arranged and connected as shown in Figure 4-2. The tests shall be conducted in still air (air flow = 25 feet per minute or less).

NEMA Standard 11-17-1988.

## 4.3 VOLTAGE DROP TEST

### 4.3.1 Test Specimens and Test Procedures

Test specimens shall be prepared in accordance with 4.2 and tested as follows:

The prepared samples shall be subjected to 500 cycles of operation. Each cycle shall consist of 45 minutes under the current load specified in Column 4 of Table 4-1, and 15 minutes at no load. During this test the following data shall be taken after 24 hours and at the completion of 500 hours.

a. Millivolt drop from the stripped portion of the lead to the reference point on the tab (measurement "A" in Figure 4-1).
b. Millivolt drop across a 1-foot section of lead wire (measurement "B" in Figure 4-2).

### 4.3.2 Voltage Drop

The total voltage drop across each termination (friction plus crimp) shall be calculated as follows and shall not exceed the value given in Table 4-1:

| Measurement "A" | – | 1/4 of Measurement "B" | = | Total voltage drop |
|---|---|---|---|---|

NEMA Standard 11-18-1982

## 4.4 ALTERNATE DIMENSIONS

To assist in determining the safety of general purpose male tabs with alternate dimensions, such tabs shall be subjected to the performance tests set forth in this Section 4 with all female connectors of the same nominal size recognized under ANSI/UL 310.

NEMA Standard 11-20-1986.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

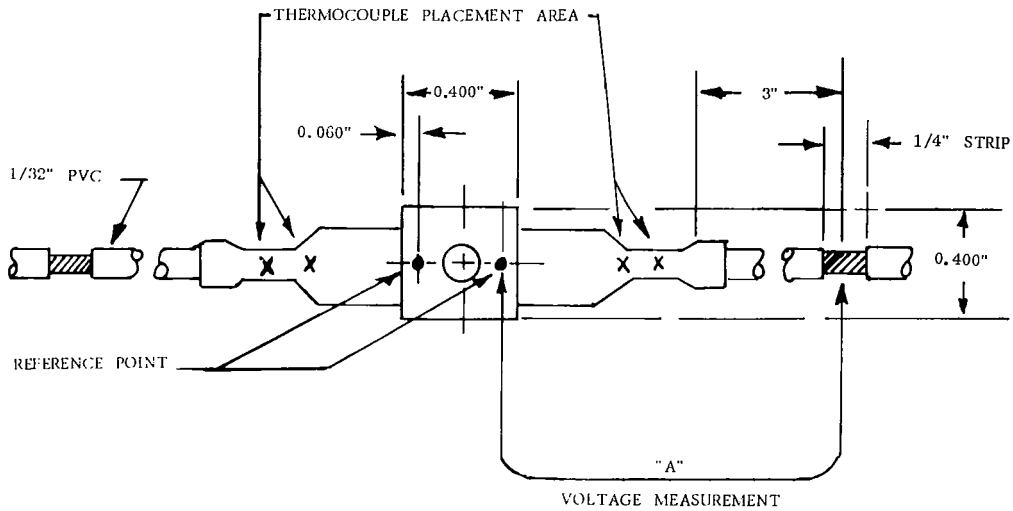



**Figure 4-1**
**LOCATION OF TEST POINTS AND THERMOCOUPLES**

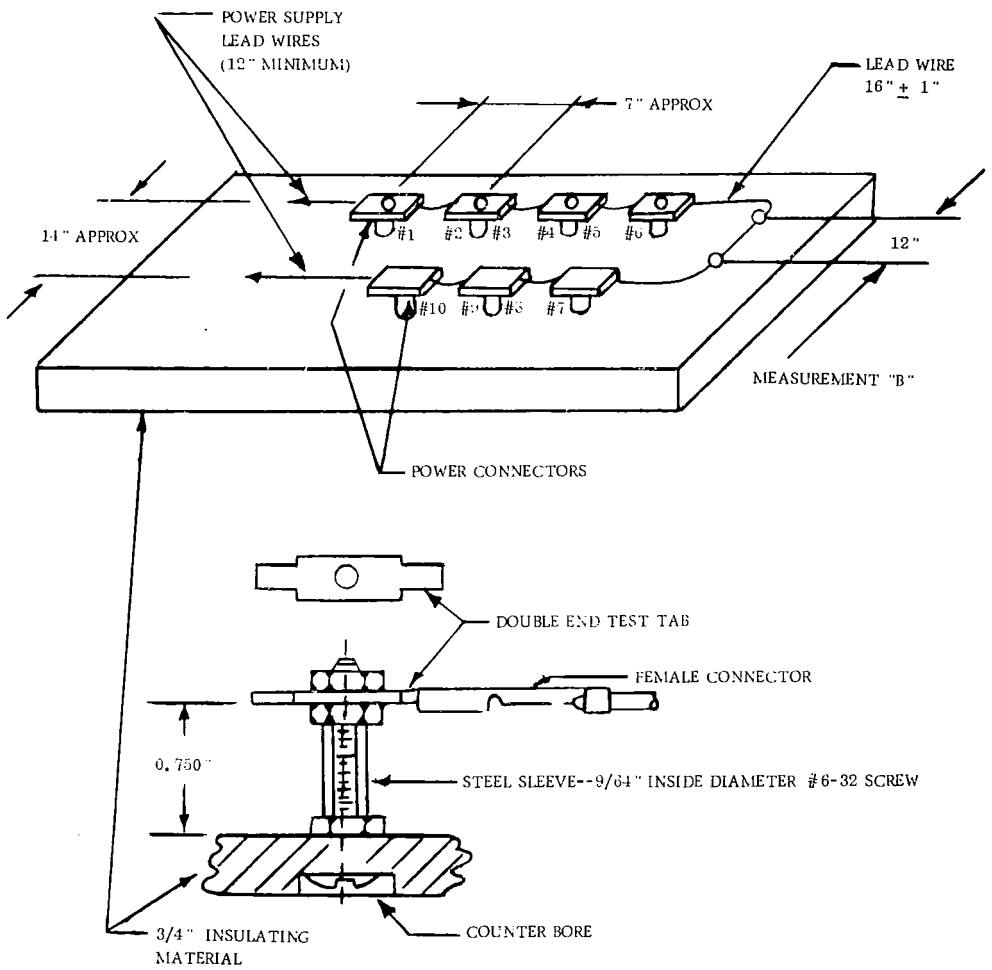



**Figure 4-2**
**CONNECTION AND ARRANGEMENT FOR CURRENT CARRYING ABILITY**

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

## Table 4-1
## TEST CURRENT/ ALLOWABLE VOLTAGE DROP

| 1 | 2 | | 3 | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tinned Copper Stranding | | | Test Current, Amperes †† | | Maximum Voltage Drop, Millivolts | | | | | | | |
| | | | | | Brass to Brass † | | | | Tin to Brass ‡ and Tin to Tin** | | | |
| AWG Size | # of Strands | AWG Size | 0.110" and 0.125" (2.8 and 3.2 mm) | All others | 0.250" (6.4mm) 24 hr | 0.250" (6.4mm) 500 hr | All others 24 hr | All others 500 hr | 0.250" (6.4mm) 24 hr | 0.250" (6.4mm) 500 hr | All others 24 hr | All others 500 hr |
| 22* | 7 | 30 | 4 | 6 | 17 | 20 | 20 | 24 | 10 | 14 | 14 | 18 |
| 20* | 10 | 30 | 6 | 8 | 17 | 20 | 20 | 24 | 11 | 15 | 15 | 19 |
| 18 | 16 | 30 | 8 | 14 | 19 | 23 | 22 | 26 | 13 | 17 | 17 | 21 |
| 16 | 26 | 30 | 10 | 20 | 21 | 26 | 25 | 29 | 15 | 19 | 19 | 23 |
| 14 | 41 | 30 | ... | 30 | 25 | 32 | 30 | 37 | 20 | 26 | 21 | 25 |
| 12 | 65 | 30 | ... | 40 | 28 | 35 | ... | ... | 22 | 28 | ... | ... |
| 10 | 105 | 30 | ... | 48 | 32 | 38 | ... | ... | 26 | 30 | ... | ... |

* Terminations of these wire sizes are not normally electrically tested because of low current density.

† Plain brass tab and plain brass connector or plated steel tab and tin-plated connector 0. 250" (6.4 mm) size only.

‡ Plain brass tab and tin-plated connector.

** Tin-plated tab and tin-plated connector.

†† The currents listed are for test purposes only and are not intended as design criteria.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

# NEMA STANDARDIZATION

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 purchasers 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, construction, 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 two classes:

1. NEMA Standard, which relates to a product, process, or procedure commercially standardized and subject to repetitive manufacture, which standard has been approved by at least 90 percent of the members of the Subdivision eligible to vote thereon;
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, which standard has been approved by at least two-thirds of the members of the Subdivision eligible to vote thereon.

*(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 been approved by at least two-thirds of the members of the Subdivision eligible to vote on the standard.
*(Standardization Policies and Procedures, pp. 7 & 16)*

## Official Standards Proposal

An Official Standards Proposal is an official draft of a proposed standard which is formally recommended to an outside organization(s) for consideration, comment, and/or approval, and which has been approved by at least 90 percent of the members of the Subdivision eligible to vote thereon.
*(Standardization Policies and Procedures, pp. 7 & 16)*

## Identification of Status

Standards in NEMA Standards Publications are identified in the foreword or following each standard as "NEMA Standard" or "Suggested Standard for Future Design." These indicate the status of the standard. These words are followed by a date which indicates when the standard was adopted in its present form by the Association.

The material identified as "Authorized Engineering Information" and "Official Standards Proposal" is designated similarly.

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale

# RESIDENTIAL CONTROLS SECTION
# OF THE
# NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
## MEMBER COMPANIES

Allen-Bradley Co.
Milwaukee, WI 53201

APCOM, Inc.
Franklin, TN 37064

Eaton Corporation
Controls Division
Carol Stream, IL 60187

Eaton Corporation
Cutler-Hammer Products
Milwaukee, WI 53216

Eaton Corporation
Mears Products
Beaverton, OR 97005

Emerson Electric Company
White-Rogers Division
St. Louis, MO 63123

Federal Pacific Electric Co.
Newark, NJ 07101

Fenwal Inc.
Ashland, MA 01721

General Electric Company
Morrison, IL 61270

GTE Products Corporation
Lighting Products Group
Standish, ME 04084

Hamilton Standard Controls, Inc.
Essex Controls
Ft. Wayne, IN 46859-1648

Harper-Wyman Company
Hinsdale, IL 60521

Honeywell, Inc.
Minnetonka, MN 55343

ITT Controls
Glendale, CA 91201

Johnson Controls, Inc.
Control Products Division
Oak Brook, IL 60521

Mallory Timers Company
Division of Emhart Industries, Inc.
Indianapolis, IN 46206

Ranco, Inc.
Plain City, OH 43064

Robertshaw Controls Co.
Richmond, VA 23261

Sunne Controls Division
PECO, Inc.
Portland, OR 97202

Texas Instruments, Inc.
Attleboro, MA 02703

Therm-O-Disc, Inc.
Subsidiary of Emerson Electric Co.
Mansfield, OH 44907

Copyright National Electrical Manufacturers Association
Provided by IHS under license with NEMA
No reproduction or networking permitted without license from IHS
Not for Resale