



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

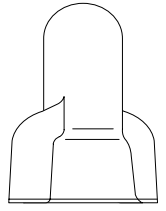
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





# Insulated Electrical Spring Connector 312



## Data Sheet

### Application:

Use a 312 connector to electrically connect two or more wire ends in a pigtail application and insulate the connection, or to insulate a single wire end.

### Wire Range:

AWG Range

COPPER conductors only, No. 22 thru No. 10 solid or stranded wire.

METRIC Range

COPPER conductors only, 0.75 mm<sup>2</sup> thru 4.0 mm<sup>2</sup> rigid (solid or stranded) and flexible.

(See wire matrix for specific wire combinations.)

### Construction:

Spring –Spring steel, Corrosion resistant coating

Insulator –Flame retardant nylon, Color–Yellow

### Weight:

0.004 lb. (1.8 gm)

### Abbreviations:

UL: Underwriters Laboratories

AWG: American Wire Gauge

CU: Copper sol.: solid, str.: stranded, mm: millimeters, mm<sup>2</sup>: square millimeters,

°C: degrees Celsius, °F: degrees Fahrenheit, gm: gram, lb.: pound

### Engineering Specification:

Electrical Spring Connector (3M™ part No. 312) shall be capable of connecting wires within the range of No. 22 thru No. 10 solid or stranded copper conductors, in a pigtail application. The connector shall constructed of an active (live) spring and covered by a nylon insulator. The spring shall have a corrosion resistant coating. The connector shall be UL Listed as a pressure cable connector, and be CSA Certified. The connector shall be voltage rated 600 volts maximum, building wire, 1000 volts maximum, signs, fixtures and luminaries. The connector shall have a maximum operating temperature of 105°C.

### Regulatory Agencies:

U.L. Listed — as a Pressure Cable Connector

Tested per UL Standard 486C

U.L. File No. E23438



LISTED 540H



Canadian Standards Association  
Standard NO. 22.2  
NO. 188–M1983  
3M File NO. LR15503



IEC Publications  
685–1 and 685–2–4  
3M File NO. E95240

OPERATING TEMPERATURE: 105°C (221°F)

VOLTAGE RATING: 600 volts maximum building wire;  
1000 volts maximum in signs and lighting fixtures  
(luminaries).

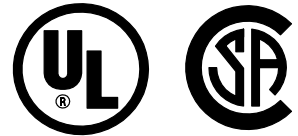
### Federal Specification W–S–610:

#### Commercial Package Only

Type	Class	Kind	Style
1	1	cu	G

# 312

AWG Wire Combinations  
copper to copper conductors



LISTED 540H

22 SOL OR STR	1 2 3 4 5																		
20 SOL OR STR	1 2 3 4 5																		
18 SOL OR STR	1 2 3 4 5																		
16 STR	1 2 3 4																		
16 SOL	1 2 3 4																		
14 STR	1 2 3 4																		
14 SOL	1 2 3 4																		
12 STR	1 2																		
12 SOL	1 2																		
10 STR	1																		
10 SOL	1																		
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4	1 2 3 4	1 2 3	1 2 3	1 2 3	1 2	1 2								
		22 SOL OR STR	20 SOL OR STR	18 SOL OR STR	16 STR	16 SOL	14 STR	14 SOL	12 STR	12 SOL									

□ = 300 volts  
● = 600 volts  
All 14 thru 10 AWG wire combination are 600 volt UL Listed when using insulation such as TW and THHN

UL Listed single wire terminations:  
No. 8, 10, 12 and 14

## HOW TO READ THIS CHART

EXAMPLE 1:

2 No. 16 sol + 4 No. 16 sol (=6) may be connected using a 312 connector

EXAMPLE 2;

3 No. 14 str + 1 No. 14 str (=4) may be connected using a 312 connector

## Installation Instructions:



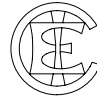
**Turn power off before installing or removing terminal. All electrical work should be done according to appropriate electrical codes.**

- Strip wire insulation to length specified in , according to size.
- Firmly grasp wires, making sure insulation ends are even and tightly bundled (wires may be twisted or untwisted). Slip connector over wire.

- Turn connector onto wires in a clockwise direction until secure.
- To remove, turn connector counter-clockwise.

Conductor Size	Strip Length
22 – 16 AWG (0,75 – 1,5 mm <sup>2</sup> )	5/8" (15,9 mm)
14 – 8 AWG (2,5 – 4,0 mm <sup>2</sup> )	1/2" (12,7 mm)

# Metric Wire Combinations



## International Electrotechnical Commission

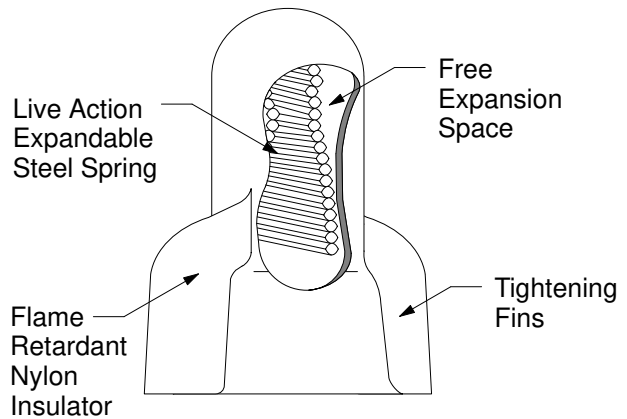
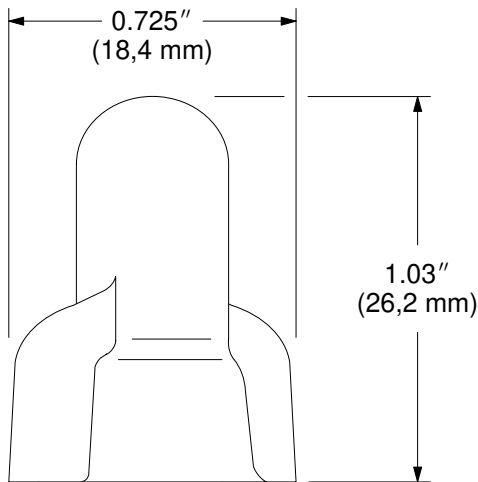
Rated Capacity: 1,5 – 10,0 mm  
 Voltage rating: 600 volts maximum  
 Reusability: Reusable for same capacity or larger  
 Wire Type: Copper only

See installation instructions for conductor strip lengths

I.E.C. Metric Wire Matrix:  
 Twist-on connecting devices for the combination of rigid (solid or stranded) and flexible conductors.

Conductor Size	Quantity
0,75 mm <sup>2</sup>	2 – 6
1,0 mm <sup>2</sup>	2 – 6
1,5 mm <sup>2</sup>	2 – 6
2,5 mm <sup>2</sup>	2 – 4
4,0 mm <sup>2</sup>	2

**NOTE: Only AWG wire combinations are UL Listed**



'3M' is a trademark of 3M.

### Important Notice to Purchaser:

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized officer of the Seller. The statements contained herein are made in

lieu of all warranties expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed.

SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY, INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY, FOR ANY INJURY OR FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS.



### Electrical Products Division

6801 River Place Blvd.  
 Austin, TX 78726-9000



Recycled paper  
 40% pre-consumer  
 10% post-consumer

Litho in USA  
 © 1997 3M  
 80-6108-5363-4