



# Wire Connector T/R+ (Tan/Red)



Wire Connector



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



PASSPORT TO EUROPEAN UNION COUNTRIES

## Data Sheet

### Application

Use a 3M™ T/R+ Wire Connector to electrically connect two or more conductor ends in a pigtail application and insulate the connection.

### Wire

AWG Range: COPPER conductors only, No. 22 thru No. 8 solid and/or stranded (see wire matrix for specific wire combinations).

METRIC Range: COPPER conductors only, 0,5 mm<sup>2</sup> thru 6,0 mm<sup>2</sup> ridged (solid) and flexible (stranded).

### Construction

Spring - Spring steel, corrosion resistant coating  
Insulator: - Flame retardant, polypropylene, tan and thermoplastic elastomer, red

### Weight

.0068 lbs. (3.1 g)

### Performance Test

The following tests were performed to the specification of UL Standard 486C and CSA Standard C22.2 No. 188-M1983.

Static-Heating	Pass
Secureness	Pass
Pullout	Pass
Dielectric Voltage Withstand	Pass
Secureness-of-Insulation	Pass
Flammability	Pass

### Other Tests:

per MIL-STD-1344A	
Method 2005.1UV Exposure	Pass
Per ASTM G-53-77 Salt Spray	Pass

### Fluid Immersion Test

Connectors were immersed in the following chemicals for seven days at 23°C±2°C with no affect on appearance or loss of material strength.

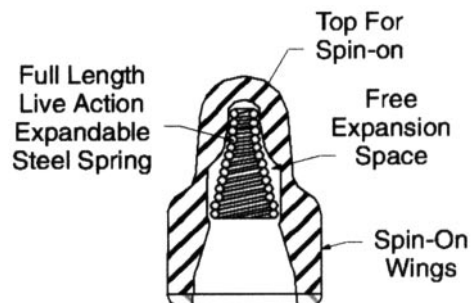
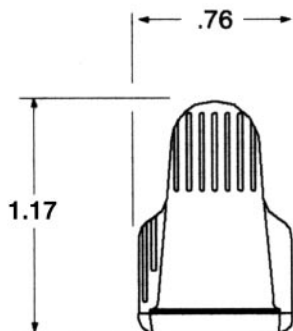
### Typical Reagents and Materials

#### From ASTM D 543-87 and MIL-STD-1344A

Acetic Acid  
Acetone  
Detergent Solution, Heavy Duty  
Ethyl Alcohol (95%)  
Ethyl Alcohol (50%)  
Heptane  
Hydrogen Peroxide Solution 28%  
Methyl Alcohol  
Sodium Hydroxide Solution  
Mineral Spirit  
Lubricating Oil

### Engineering Specification

3M T/R+ Wire Connector is capable of connecting two or more wires in a pigtail application, in the wire range of No. 22 thru No. 8 AWG solid and/or stranded copper conductors. The connector shall be constructed of an active (live) spring with a corrosion resistant coating. The connector shall be UL LISTED and CSA Certified as a pressure wire connector. The connector shall be voltage rated 600 volts maximum building wire and 1000 volts maximum signs and lighting fixtures (luminaries). The connector shall have a maximum operating temperature of 105°C (221°F).





# Wire Connector T/R+

AWG Wire Combinations  
Copper to Copper Conductors

How to read this chart:

**Example 1:**  
1 No. 18 str  
+ 4 No. 20 solid or str (5)

**Example 2:**  
1 No. 12 sol  
+ 2 No. 12 str (3)

22 SOL or STR	1 2 3 4																		
20 SOL or STR	1 2 3 4																		
18 STR	1 2 3 4 5																		
18 SOL	1 2 3 4 5																		
16 STR	1 2 3 4 5																		
16 SOL	1 2 3 4 5																		
14 STR	1 2 3 4 5																		
14 SOL	1 2 3 4 5																		
12 STR	1 2 3 4																		
12 SOL	1 2 3 4																		
10 STR	1 2																		
10 SOL	1 2																		
8 STR	1																		
TR+	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	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						
	22 SOL or STR	20 SOL or STR	18 STR	18 SOL	16 STR	16 SOL	14 STR	14 SOL	12 STR	12 SOL	10 STR	10 SOL							

## Installation Instructions

### ⚠ WARNING

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

1. Strip wire insulation 1/2".
2. Firmly grasp wires, making sure insulation ends are even and tightly bundled. (Wires may be twisted or untwisted.) Lead stranded wires slightly. Slip the connector over wire tips.
3. Turn connector onto wires in clockwise direction until secure.
4. To remove, turn connector counter- clockwise.

## Regulatory Agencies

**UL Listed** as a Pressure Cable Connector

Tested per UL Standard 486C

UL File No. E23438

Operating Temperature: 105°C (221°F)

Voltage Rating: 600 volts max. building wire;

1000 volts max. signs and fixtures

Flammability Rating: UL94 V-2

**CSA Certified**-CSA Standard C22.2 No. 0, 188-M1983

CSA File No. LR15503

Operating Temperature: 105°C (221°F)

Voltage Rating: 600 volts max. building wire

1000 volts max. signs and luminaires.

Flammability Rating: C22.2 No. 0.6 V-2

Operating Temperature: 105°C (221°F)

Voltage Rating: 600 volts max. building wire;

1000 volts max. signs and fixtures

Flammability Rating: UL94 V-2

### Federal Specification W-S-610:

“Commercial package only”

Type	Class	Kind	Style
1	1	cu	G

## Metric Wire Combinations

### Copper Conductors Only

Cross Section Capacity	
Minimum	Maximum
2.0mm <sup>2</sup>	12.5mm <sup>2</sup>

Conductor Combinations		
Quantity	Size	Type
6	0,5mm <sup>2</sup>	sol/str
3-6	0,75mm <sup>2</sup>	sol/str
2-6	1,0mm <sup>2</sup>	sol/str
2-6	1,5mm <sup>2</sup>	sol/str
2.5	2,5mm <sup>2</sup>	sol/str
2.3	4.0 mm <sup>2</sup>	sol/str

Only AWG combinations are UL Listed or CSA Certified.

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# 3M

#### Electrical Products Division

6801 River Place Blvd.  
Austin, TX 78726-9000  
<http://www.3M.com/elpd>

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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А