

3M™ Wire Connector O/B+

Data Sheet

September 2013

Product Description

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

Agency Approvals & Self Certifications



LISTED
WIRE
CONNECTOR
314R

Underwriters Laboratories
Standard NO. UL 486C
3M File NO. E23438



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

UL Listed

As a Pressure Wire 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 lighting fixtures (luminaries)

Flammability Rating: UL94 V-2

CSA Certified

CSA Standard C22.2 No. 188-M1983, CSA File No. LR15503

Operating Temperature: 105°C (221°F) Voltage Rating: 600 volts max. Building wire 1000 volts max. signs and lighting fixtures (luminaries)

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

Federal Specification W-S-610

“Commercial Package Only”

Type	Class	Kind	Style
1	1	cu	G

Applications

AWG Range: COPPER conductors only, No. 22 thru No. 12 solid and/or stranded.

METRIC Range: COPPER conductors only, 0,5 mm² thru 2,5 mm², ridged (solid or stranded) and flexible (See wire matrix for specific wire combinations.)

3M™ Wire Connector O/B+

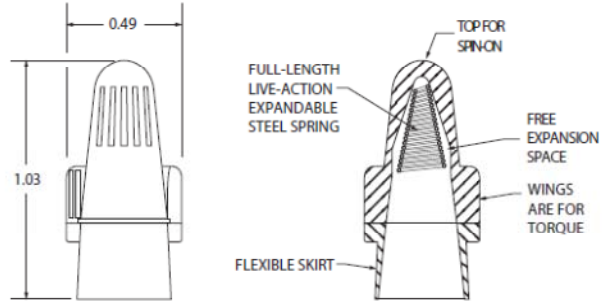
Specifications - Product

Weight: 0.0025 lbs. (1,13 gm)

Construction:

Spring: Spring steel, corrosion-resistant coating

Insulator: Flame retardant, polypropylene and thermoplastic elastomer, color coded; orange/blue



Specifications – Engineering/ Architectural

3M™ Wire Connector O/B+ is capable of connecting two or more wires in a pigtail application, in the wire range of No. 22 thru No. 12 AWG solid and/or stranded copper conductors. The connector shall be constructed with an active (live) spring with a corrosion resistant coating.

3M™ Wire Connector O/B+

Typical Physical and Electrical Properties

Performance Test (The following tests were performed to the specifications of UL Standard 486C and CSA Standard C22.2 No. 188-M1983.) unless stated	
Test	Typical Value
Static -Heating	Pass
Secureness	Pass
Pullout	Pass
Dielectric Voltage Withstand	Pass
Secureness-Of-Insulation	Pass
Flammability	Pass
Salt Spray (Per MIL-STS-1344A Method 1001.1)	Pass
Vibration (Per MIL-STS-1344A Method 2005.1)	Pass
UV Exposure (Per ASTM G-53-77)	Pass

Fluid Immersion Test

Typical Reagents and Materials From ASTM D 543-87 and MIL-STD-1344A (Connectors were immersed in the following chemicals for seven days at 23°C ±2°C.	
Acetic Acid	Pass
Acetone	Pass
Detergent Solution, Heavy Duty	Pass
Ethyl Alcohol (95%)	Pass
Ethyl Alcohol (50%)	Pass
Heptane	Pass
Hydrogen Peroxide Solution 28%	Pass
Methyl Alcohol	Pass
Sodium Hydroxide Solution	Pass
Mineral Sprit	Pass
Lubricating Oil	Pass

Installation Techniques

CAUTION

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

1. Strip wire insulation:
22–16 AWG = 5/8" 14–12 AWG = 1/2"
2. Firmly grasp wires, making sure insulation ends are even and tightly bundled. (Wires may be twisted or untwisted.) Slip the connector over wire tips.
3. Turn connector onto wires in clockwise direction until secure.
4. To remove, turn connector counter-clockwise.

3M™ Wire Connector O/B+

Wire Matrix

													Metric Wire Combination					
													Cross Section Capacity		1,0 mm ² through 5,0 mm ²			
													Conductor Combinations	Quantity	Size	Type		
														2-6	0,5 mm ²	sol./str.		
														2-5	0,75 mm ²	sol./str.		
														2-4	1,0 mm ²	sol./str.		
														2-4	1,5 mm ²	sol./str.		
														3	2,5 mm ²	sol.		
*Only AWG wire size combinations are UL LISTED or CSA Certified.																		
22 STR	1 2 3 4 5 6																	
22 SOL	1 2 3 4 5 6																	
20 STR	1 2 3 4 5																	
20 SOL	1 2 3 4 5																	
18 STR	1 2 3 4																	
18 SOL	1 2 3 4																	
16 STR	1 2 3 4																	
16 SOL	1 2 3 4																	
14 STR	1 2 3																	
14 SOL	1 2 3																	
12 STR	1 2																	
12 SOL	1 2																	
O/B+	1 2 3 4 5 6	1 2 3 4 5 6	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	1 2	1	1						
	22 STR	22 SOL	20 STR	20 SOL	18 STR	18 SOL	16 STR	16 SOL	14 STR	14 SOL	12 STR	12 SOL						

3M™ Wire Connector O/B+

Shelf-Life & Storage

This product has a 5-year shelf life from date of manufacture when stored in a humidity controlled storage (10°C/50°F to 27°C/80°F and <75% relative humidity).

Availability

Please contact your local distributor; available from 3M.com/electrical {Where to Buy} or call 1-800-245-3573.

3M is a trademark of 3M Company.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product, which are not contained in 3M's current publications, or any contrary statements contained on your purchase order, shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability

This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



Electrical Markets Division
6801 River Place Blvd.
Austin, TX 78726-9000
800.245.3573
FAX: 800.245.0329
www.3M.com/electrical

Please recycle
© 3M 2013 All rights reserved
78-8121-1125-6 Rev D

3M™ Wire Connector O/B+

Data Sheet

September 2013

Product Description

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

Agency Approvals & Self Certifications



LISTED
WIRE
CONNECTOR
314R

Underwriters Laboratories
Standard NO. UL 486C
3M File NO. E23438



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

UL Listed

As a Pressure Wire 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 lighting fixtures (luminaries)

Flammability Rating: UL94 V-2

CSA Certified

CSA Standard C22.2 No. 188-M1983, CSA File No. LR15503

Operating Temperature: 105°C (221°F) Voltage Rating: 600 volts max. Building wire 1000 volts max. signs and lighting fixtures (luminaries)

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

Federal Specification W-S-610

“Commercial Package Only”

Type	Class	Kind	Style
1	1	cu	G

Applications

AWG Range: COPPER conductors only, No. 22 thru No. 12 solid and/or stranded.

METRIC Range: COPPER conductors only, 0,5 mm² thru 2,5 mm², ridged (solid or stranded) and flexible (See wire matrix for specific wire combinations.)

3M™ Wire Connector O/B+

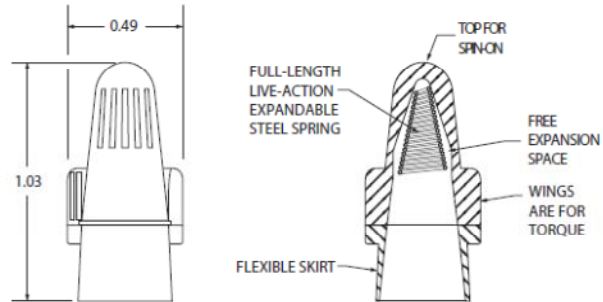
Specifications - Product

Weight: 0.0025 lbs. (1,13 gm)

Construction:

Spring: Spring steel, corrosion-resistant coating

Insulator: Flame retardant, polypropylene and thermoplastic elastomer, color coded; orange/blue



Specifications – Engineering/ Architectural

3M™ Wire Connector O/B+ is capable of connecting two or more wires in a pigtail application, in the wire range of No. 22 thru No. 12 AWG solid and/or stranded copper conductors. The connector shall be constructed with an active (live) spring with a corrosion resistant coating.

3M™ Wire Connector O/B+

Typical Physical and Electrical Properties

Performance Test (The following tests were performed to the specifications of UL Standard 486C and CSA Standard C22.2 No. 188-M1983.) unless stated	
Test	Typical Value
Static -Heating	Pass
Secureness	Pass
Pullout	Pass
Dielectric Voltage Withstand	Pass
Secureness-Of-Insulation	Pass
Flammability	Pass
Salt Spray (Per MIL-STS-1344A Method 1001.1)	Pass
Vibration (Per MIL-STS-1344A Method 2005.1)	Pass
UV Exposure (Per ASTM G-53-77)	Pass

Fluid Immersion Test

Typical Reagents and Materials From ASTM D 543-87 and MIL-STD-1344A (Connectors were immersed in the following chemicals for seven days at 23°C ±2°C.	
Acetic Acid	Pass
Acetone	Pass
Detergent Solution, Heavy Duty	Pass
Ethyl Alcohol (95%)	Pass
Ethyl Alcohol (50%)	Pass
Heptane	Pass
Hydrogen Peroxide Solution 28%	Pass
Methyl Alcohol	Pass
Sodium Hydroxide Solution	Pass
Mineral Sprit	Pass
Lubricating Oil	Pass

Installation Techniques

CAUTION

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

1. Strip wire insulation:
22–16 AWG = 5/8" 14–12 AWG = 1/2"
2. Firmly grasp wires, making sure insulation ends are even and tightly bundled. (Wires may be twisted or untwisted.) Slip the connector over wire tips.
3. Turn connector onto wires in clockwise direction until secure.
4. To remove, turn connector counter-clockwise.

3M™ Wire Connector O/B+

Wire Matrix

													Metric Wire Combination					
													Cross Section Capacity		1,0 mm ² through 5,0 mm ²			
													Conductor Combinations	Quantity	Size	Type		
														2-6	0,5 mm ²	sol./str.		
														2-5	0,75 mm ²	sol./str.		
														2-4	1,0 mm ²	sol./str.		
														2-4	1,5 mm ²	sol./str.		
														3	2,5 mm ²	sol.		
													*Only AWG wire size combinations are UL LISTED or CSA Certified.					
22 STR	1 2 3 4 5 6																	
22 SOL	1 2 3 4 5 6																	
20 STR	1 2 3 4 5																	
20 SOL	1 2 3 4 5																	
18 STR	1 2 3 4																	
18 SOL	1 2 3 4																	
16 STR	1 2 3 4																	
16 SOL	1 2 3 4																	
14 STR	1 2 3																	
14 SOL	1 2 3																	
12 STR	1 2																	
12 SOL	1 2																	
O/B+		1 2 3 4 5 6	1 2 3 4 5 6	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	1 2	1	1					
		22 STR	22 SOL	20 STR	20 SOL	18 STR	18 SOL	16 STR	16 SOL	14 STR	14 SOL	12 STR	12 SOL					

3M™ Wire Connector O/B+

Shelf-Life & Storage

This product has a 5-year shelf life from date of manufacture when stored in a humidity controlled storage (10°C/50°F to 27°C/80°F and <75% relative humidity).

Availability

Please contact your local distributor; available from 3M.com/electrical {Where to Buy} or call 1-800-245-3573.

3M is a trademark of 3M Company.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product, which are not contained in 3M's current publications, or any contrary statements contained on your purchase order, shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability

This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



Electrical Markets Division
6801 River Place Blvd.
Austin, TX 78726-9000
800.245.3573
FAX: 800.245.0329
www.3M.com/electrical

Please recycle
© 3M 2013 All rights reserved
78-8121-1125-6 Rev D