

3M Wire Connectors

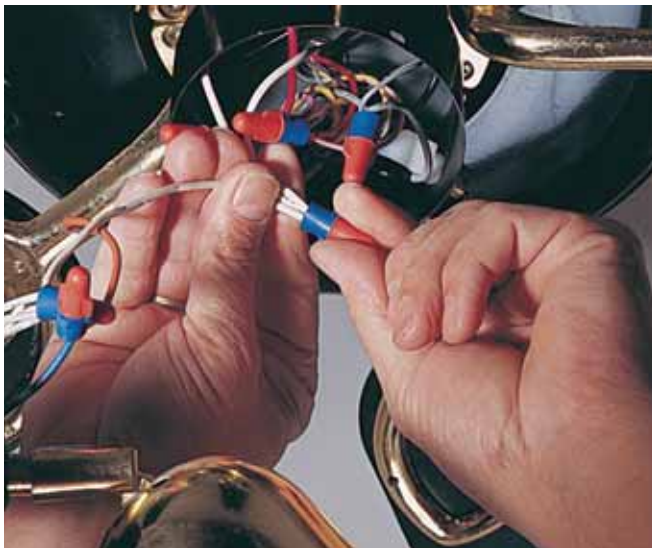
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The best connectors do more than fit the application; they also fit your hand, and they feel good to use. At 3M, we design connectors that are as comfortable and easy to use as they are dependable.

Our complete line provides a wide range of connector choices. Simply choose the connector that fits your personal preference, as well as the application. We give you plenty of choices.

Start with the unique Performance Plus wire connectors. See just how easy it is to work with three sizes instead of seven, and still cover the entire 600-volt copper wire range. The Scotchlok™ connectors are our original color-coded line of wire connectors designed with the exact features requested most by electricians. 3M wire connectors are hardy for regular or low-voltage systems in construction, industrial, maintenance, OEM or irrigation. Highland™ wire connectors offer an affordable alternative with no compromise to quality.

It's all here — right at your fingertips — with 3M's family of easy-to-use, versatile and highly reliable wire connectors.



Quick, reliable splices are a snap and a squeeze

For over 30 years, 3M has been designing connectors with the reliability and ease of installation that electricians demand. From the very first Scotchlok insulation displacement connector (IDC) to today's improved models, 3M has always provided connection technology that saves time and money.

The latest series of IDCs has kept all that was good about the original connector — the design, the shape, the element technology and the color-coding.

Choose from 38 different 3M IDCs that meet a variety of uses; including fluorescent ballast installation and replacement, fixture and appliance wiring, automotive and marine wiring, and control circuit wiring. Whatever the application, 3M has the connector to make your job easier.

Spring Connectors and Tools

3M™ “Performance Plus” Wire Connectors
(T/R+, T/Y+, O/B+, R/Y+, B/G+)



Because of their increased wire range, just four “Performance Plus” Wire Connectors handle the work of seven standard connectors. T/R+ replaces the yellow, tan and red connectors in the majority of field applications. T/Y+ replaces yellow, orange, blue and gray wire nuts. O/B+ replaces the orange, blue and gray wire nut style connectors, as well as 70% of the yellow wire nut and wing style connectors. R/Y+ replaces both red and yellow wing style connectors. B/G+ covers both the large blue and gray connectors. This simplifies selection of the right connector for a wide range of wiring jobs. There’s also less inventory to manage, and a better chance you’ll have the connector you need to do every job.

3M™ Scotchlok™ Electrical Spring Connectors
Y, R, G and B



Scotchlok Electrical Spring Connectors Y, R, G and B are the original color-coded wire connectors with a unique soft shell that is easy on the fingers. They’re flexible,

yet durable, and provide a compact, fully-insulated connection that won’t cut or abrade wires. Their torque fins are engineered to provide a comfortable and secure grip, which makes installation fast and back-off easy.

3M™ Electrical Spring and Grounding Connectors 312, 412, 512 and 512G



The quick-spin, wing-torque design of Electrical Spring and Grounding Connectors 312, 412 and 512 is easy on your fingers. The day’s last connection will

feel almost as good as the first. Generous expansion room accommodates a wide range of solid or stranded wire. Use the 312 (yellow) connector for wire combinations from 3 #20 to 3 #12 AWG, the 412 connector for 2 #20 to 3 #10 AWG and the 512 (red) connector for 2 #18 to 5 #12 AWG. The 512G (green) is used for grounding connections.



Features — Advantages — Benefits

Spring Connectors

3M “Performance Plus” Wire Connectors (T/R+, T/Y+, O/B+, R/Y+, B/G+)

Wires feed deeper	Increases level of pull out	Security
Wide wire ranges	Three connectors replace seven	Saves money and time
Flexible skirt	Covers overstripped wires	Safety
New internal design	Smoother and faster installation	Improves quality and saves time

Scotchlok Electrical Spring Connectors (Y, R, G, B)

Soft outer shell	Easy on the fingers	Easy to use
Soft inner shell	No wire poke-through	Safety
Compact design	Fit into tight places	Easy to use
Able to back off	Rewire if needed	Saves time

3M Electrical Spring and Grounding Connectors (312, 412, 512, 512G)

Hard shell	Easy to grip	Easy to use
Wings	Easy to turn	Easy to use

Highland™ Wire Connectors (H-29, H-30, H-31, H-33, H-35)

Low price	Economical	Save money
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Highland™ Wire Connectors



Highland Wire Connectors make it quick and easy to match the right connector to the size of the wire. The shells are designed to withstand temperatures up to 221°F (105°C). Highland color-coded wire connectors are

UL Listed, CSA Certified, and work equally well with either solid or stranded wire. H-29 and H-30 connectors are rated to 300V. H-31, H-33 and H-35 connectors are rated to 600V (1000V in signs and lighting fixtures).

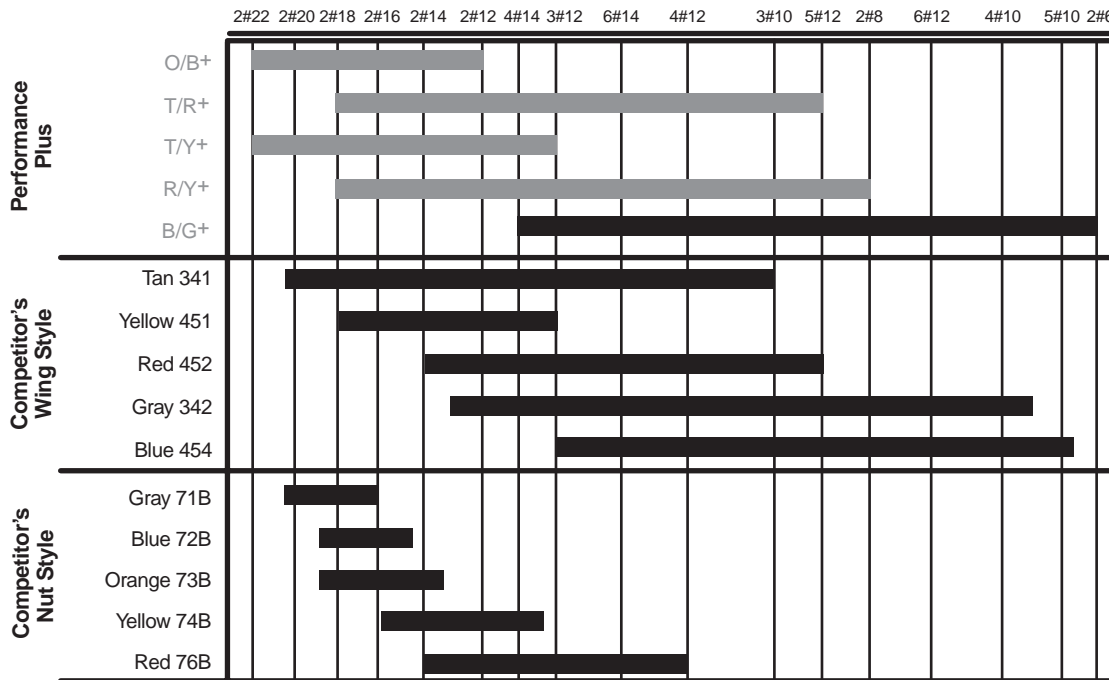
3M™ Wire Connector Drivers WCD







































These application tools for 3M “Performance Plus” O/B+ and R/Y+; 3M 312, 412, and 512; and Scotchlok™ Y, R, and G connectors quickly spin on the connector and position the wire

bundle in the box. The WCD-H is a hand driver and the WCD-P is a power driver that fits a standard chuck.

Wire Range for 3M “Performance Plus” Wire Connectors



Specification Information for Spring Connectors

Connector	Features/ Description	Maximum Voltage Rating	Wire Range* AWG (mm ²)	Temp. Rating	UL, CSA or CE Certified	Tools
3M™ Connector O/B+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	2#22-2#12 3#14 (1,0 mm ² -5,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector T/R+ 	Quick bite, compact size wide wire range	600V (1000V in signs, lighting fixtures and luminaries)	up to 5#12s (2,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector T/Y+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	2#22-3#12 3#14 (1,0 mm ² -5,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector R/Y+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	2#18-2#8 5#12 (2,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector B/G+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	4#14-2#6-3#8 (10,0 mm ² -31,6 mm ²)	221°F (105°C)	UL  CE †	—
3M™ Scotchlok™ Connector R 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	9#18, 4-6#16, 2-5#14, 2-5#12, 1-3#10 (5,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Scotchlok™ Connector Y 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	5-8#22, 4-6#20, 2-5#18, 2-3#16, 1-3#14, 1-2#12, 1#10 (2,0 mm ² -17,5 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Scotchlok™ Connector B 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	3-6#12, 2-6#10, 2-3#8, 1-2#6 stranded (12,0 mm ² -36,0 mm ²)	221°F (105°C)	UL  CE †	—
3M™ Scotchlok™ Connector G 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	3-7#14, 2-6#12, 2-4#10, 2#8 (8,0 mm ² -24,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector 312 	Nylon Insulated w/live spring	600V (1000V for signs, lighting fixtures and luminaries)	5-7#22, 3-6#20, 2-6#18 2-6#16, 1-4#14, 1-3#12 (1,5 mm ² -10,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector 412 	Nylon Insulated w/live spring	600V (1000V for signs, lighting fixtures and luminaries)	5-7#22, 3-6#20, 2-6#18 2-6#16, 1-4#14, 1-3#12 (1,5 mm ² -10,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector 512 	Nylon insulated w/live spring	600V (1000V for signs, lighting fixtures and luminaries)	2-10#18, 2-7#16, 1-6#14, 1-5#12, 1-3#10, 1-2#8, 1#6 (2,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  CE †	WCD-P WCD-H
3M™ Connector 512G 	Nylon insulated grounding connector	600V (1000V for signs, lighting fixtures and luminaries)	2-5#14, 2-5#12, 2-3#10, 1#14 w/ 1-4#12, 2#14 w/1-3#12, 3#14 w/2 or 3 #12, 4#14 w/1#12, 1#14 w/1-3#10, 2#14 w/1 or 2#10, 3#14 w/1#10, 1#12 w/1 or 2#10, 2#12 w/1#10 (4,0 mm ² -15,0 mm ²)	221°F (105°C)	UL  CE †	—
3M™ Highland™ Connector H-29 	Round wire spring	300V	22-16 AWG [One 22 AWG/One 20 AWG Min.] [Two 16 AWG Max.] (1,5 mm ² -2,5 mm ²)	221°F (105°C)	UL  CE	—
3M™ Highland™ Connector H-30 	Round wire spring	300V	22-16 AWG [Three 20 AWG Min.] [Three 16 AWG Max.] (1,5 mm ² -3,0 mm ²)	221°F (105°C)	UL  CE	—
3M™ Highland™ Connector H-31 	Round wire spring	600V (1000V in signs, lighting fixtures and luminaries)	18-14 AWG [Two 18 AWG Min.] [Two 14 AWG Max.] (2,0 mm ² -4,0 mm ²)	221°F (105°C)	UL  CE	—
3M™ Highland™ Connector H-33 	Round wire spring	600V (1000V in signs, lighting fixtures and luminaries)	18-12 AWG [Two 18 AWG Min.] [Three 14 AWG Max.] (2,0 mm ² -0,5 mm ²)	221°F (105°C)	UL  CE	—
3M™ Highland™ Connector H-35 	Round wire spring	600V (1000V in signs, lighting fixtures and luminaries)	18-10 AWG [Three 18 AWG Min.] [Three 10 AWG Max.] (2,5 mm ² -16,0 mm ²)	221°F (105°C)	UL  CE	—

*For information on additional Cu wire connections, refer to package or consult 3M technical service.

† UL Listed E23438 and CSA Certified LR15503

Ordering Information for Spring Connectors

Product Number	UPC (054007-)	Inner Unit Pack	Case Qty. (connectors)
O/B+	43152	100/box	1,000 box
	43153	500/container	10,000 bulk
T/R+	54454	100/box	1,000 box
	54455	750/jug	6,000 jug
	54456	25,000/keg	25,000 keg
T/Y+	55219*	500/jug	10,000 jug
	55218*	100/box	1,000 box
R/Y+	43154	100/box	1,000 box
	43155	500/container	4,000 bulk
B/G+	43150	50/box	500 box
	43151	250/container	2,000 bulk
R	20058	100/box	1,000 box
	70489	500/bag	5,000 bulk
Y	20041	100/box	1,000 box
	15769	500/bag	10,000 bulk
B	42033	50/box	500 box
G	21346	100/box	1,000 box
	70488	500/bag	2,500 bulk
312 (Yellow)	08159	100/box	1,000 box
	08160	500/bag	10,000 bulk
412	54451*	100/box	1,000 box
	54452*	500/bag	10,000 bulk
512 (Red)	08161	100/box	1,000 box
	08162	500/bag	10,000 bulk
512G (Green)	49950	50/box	500 box
	50232	500/bag	10,000 bulk
H-29 (Gray)	43133	100/box	1,000 box
	43134	-	1,000 bin
	43135	-	25,000 keg (loose)
H-30 (Blue)	43122	100/box	1,000 box
	43123	-	1,000 bin
	43124	-	10,000 keg (loose)
H-31 (Orange)	43117	100/box	1,000 box
	43118	500/bag	10,000 bulk
	43119	-	1,000 bin
	43120	-	10,000 keg
H-33 (Yellow)	43136	100/box	1,000 box
	43138	500/bag	5,000 bulk
	43137	-	1,000 bin
	43139	-	5,000 keg
H-35 (Red)	43140	100/box	1,000 box
	43142	250/bag	2,500 bulk
	43141	-	1,000 bin

*UPC prefix 051128-

Specification and Ordering Information for Application Tools

Product Number	Description	Application	UPC (054007-)	Inner Unit Pack	Case Qty.
WCD-P	Power driver using a standard chuck, drill or screw driver	Tools for 3M™ O/B+, R/Y+, Scotchlok™ Y, R, G and 3M 212, 312, and 512.	49919	-	10
WCD-H	Hand driver	Tools for 3M O/B+, R/Y+, Scotchlok Y, R, G and 3M 212, 312, and 512.	49948	-	10

Crimp Sleeve Connectors

3M™ Scotchlok™ Insulated Electrical Crimp Sleeve Connectors S-11 and S-31

UL Listed and CSA Certified, Scotchlok electrical crimp sleeve connectors make fast work of splicing 22 to 10 AWG copper conductors. Smooth flared entry makes wire insertion fast – simply twist conductors together and crimp. The S-11 and S-31 (copper), and MN14CEC/ST and MN10CEC/ST (steel) are insulated, closed-end crimp sleeve connectors.



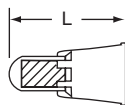
With a rugged, yet resilient nylon insulator, use these connectors in light fixtures, appliances and other electrical OEM applications.

Specification and Ordering Information for Nylon Insulated Closed End Connectors (Steel and Copper Insert)



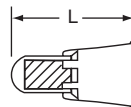
Product Number [†]	UPC (054007-)	Wire Range (AWG)	Copper Wire Combinations	L	Barrel Length	Barrel I.D.
722N (copper)*	29405	22-14	see chart below	0.76	0.31	0.091
722NS (steel)*	29610	22-14	see chart below	0.76	0.31	0.091
718N (copper)*	29406	18-10	see chart below	0.85	0.34	0.152
718NS (steel)*	29611	18-10	see chart below	0.85	0.34	0.152

* UL Listed and CSA Certified for use with TH-440 and TH-450 Crimping Tools.

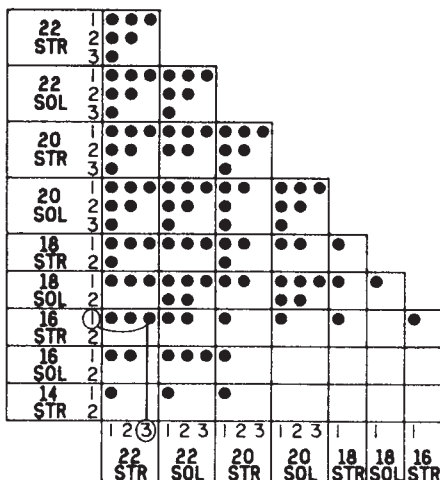


722-N, 722-NS
22-14

Wire Range

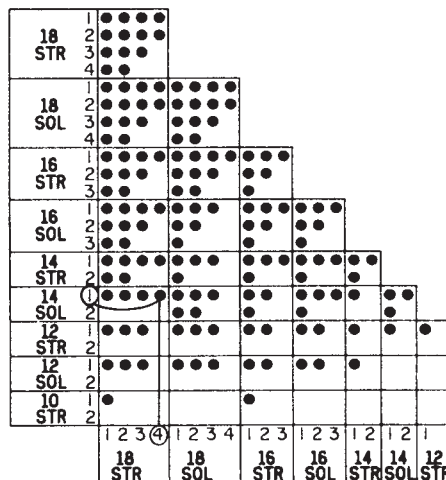


718-N, 718-NS
18-10



How to read chart for 722-N:

One #16 Stranded plus three #22 Stranded (equaling four wires) can be connected using an 722-N connector.



How to read chart for 718-N:

One #14 Solid plus four #18 Stranded (equaling five wires) can be connected using an 718-N connector.

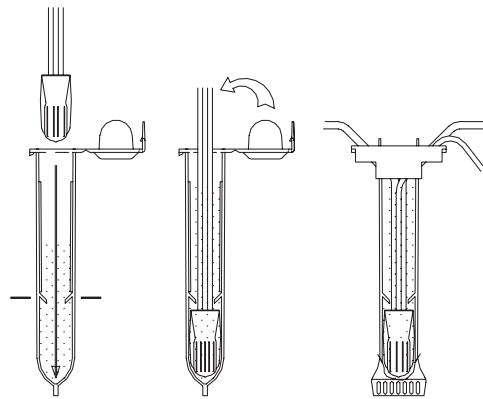
Direct Bury Products and Sealing Pack

3M™ Direct Bury Products

3M DBY/DBR Direct Bury Splice Kits are real time savers when installing underground electrical systems. Every component for the splice is included in the kit. The insulator tube is pre-filled, eliminating the chance of the installer using too much, or too little sealant.

No crimping tools, no waste, no mess. Just quick, reliable underground splices for irrigation and sprinkler systems, landscape lighting and other 30-volt underground projects. The splice may be reentered without cutting the wires (new tube required).

These 3M underground electrical wire connectors splice and effectively moisture-seal two or more conductors for



remote-control circuits in irrigation and landscape lighting systems. **DBY-6 and DBR-6 are UL Listed and CSA Certified for 600V direct bury and submersion applications. UL File No. E102356 and CSA File No.LR91920.** Each kit makes two splices.

Product Referral Generator

Connecting
– 316IR IDC pg.103

Specification Information for 3M Direct Bury Products

Product Number	Description and Kit Contents	Wire Range (AWG)	Volts	Temperature Range	UL File No. E102356 and CSA File No. LR91920
DBR	(2) Tubes (2) Scotchlok™ R Connectors	5#16-3#10 (5,0–16,0 mm ²)	30	32°-120°F (0°-49°C)	n/a
DBR-6	(2) Tubes (2) Scotchlok R Connectors	5#16-3#10 2#12 (5,0–16,0 mm ²)	600	32°-120°F (0°-49°C)	CE UL SF
DBY	(2) Tubes (2) Scotchlok Y Connectors	2-5#18 thru 2#12 (2,0–7,5 mm ²)	30	32°-120°F (0°-49°C)	n/a
DBY-6	(2) Tubes (2) Scotchlok Y Connectors	2-5#18 thru 2#12 (2,0–7,5 mm ²)	600	32°-120°F (0°-49°C)	CE UL SF
3570G	Connector sealing pack containing 3M Scotchcast 400 epoxy resin	Accommodates 3M O/B+, R/Y+, Scotchlok Y, R, G, B and 3M 212, 312, 512	30	n/a	n/a

Ordering Information for 3M Direct Bury Products

Product Number	UPC (054007-)	Inner Unit Pack	Case Qty.
DBR	09964	Kit- 2 Tubes and 2 Scotchlok R Connectors 100 tubes and 100 connectors	25 kits 100 each
DBR-6	69756	Kit- 2 Tubes and 2 Scotchlok R Connectors 100 tubes and 100 connectors	25 kits 100 each
DBY	09053	Kit- 2 Tubes and 2 Scotchlok Y Connectors 100 tubes and 100 connectors	25 kits 100 each
DBY-6	69757	Kit- 2 Tubes and 2 Scotchlok Y Connectors 100 tubes and 100 connectors	25 kits 100 each
3570G	53241*	10/box	100 each

* UPC prefix 051128-

Insulation Displacement Connectors and Tools

3M™ Scotchlok™ Connectors IDC for Electrical Applications



The latest series of Scotchlok Insulation Displacement Connectors (IDCs) has kept all that was good about the original connector — the design, the shape, the element technology and the color-coding. Each model,

however, also incorporates a full wire range capability, an increased port size that accommodates up to 0.155" (4,0 mm) insulation sizes, double "U" elements and a solvent-resistant plastic construction. Choose from 38 different 3M IDCs to meet a variety of uses; including fluorescent ballast installation and replacement, fixture and appliance wiring, automotive and marine wiring, and control circuit wiring.

Scotchlok Connectors IDC for Communication Applications



Over 30 years ago, 3M introduced the industry's original U element connector, the Scotchlok Connector UR. The latest series of connectors; the Scotchlok connectors UR2,



UY2 and UB2A; features that same originality in technological advantages, building on the successful Scotchlok connector's design, shape, color-coded cap concepts and element technology. The Series 2 connectors additionally

offer full wire range capability, increased port size to accommodate up to 0.082" (2,08 mm) insulation sizes, double elements in all products and a solvent-resistant plastic construction.

3M™ Crimping Tools E-9BM, E-9C, E-9E, E-9Y and E-9R

The Crimping Tool E-9BM is used with most Scotchlok connectors, and has parallel closing action with adjustable jaws and a high mechanical advantage. The Cartridge Tool E-9C with Case holds connectors (in cartridges) firmly in place, allowing the craftsman use of the other hand for guiding wires. A time saving tool, the E-9C tool holds cartridges of UR2, UR, UY2, UY, or UAL connectors. The Crimping Tool E-9E is a parallel closing-action tool for use with Scotchlok butt and tap connectors. The Crimping Tool's E-9Y stepped jaws and long nose provide parallel crimping



action. Its features include a side wire cutter, cushioned handles and a return spring. The Crimping Tool E-9R features single-stroke, parallel crimping action with a work-saving 10:1 mechanical advantage over applied hand force. The tool's innovative ratchet-

release design indicates a positive crimp by automatically releasing after each successful connection. The E-9R tool is compatible with all 3M™ Scotchlok™ Connectors including UY, UR, UY2, UR2, UP2, UAL, UP3, UB, 211 and UB2A units across the entire range of applicable wire sizes.



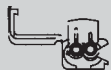
Features — Advantages — Benefits

Insulation Displacement Connectors

Squeeze-shut connector	No wire stripping or twisting	Saves time
Crimp with slip-joint pliers	No special tools required	Saves money
Unique "U" contact, fully insulated	Provides dependable connections	Safety
No need to cut run wire	Faster installation, minimum clean up	Saves time
No need to twist on	Easy on hands	Easy to use



Connecting Tips



Quick, reliable splices are a squeeze. And a snap.




3M Scotchlok Insulation Displacement Connectors (IDCs) are easy to use and save time — to install one, just squeeze — no stripping or twisting. Our unique "U" contact provides a dependable electrical connection.



- A "live-spring" joint is made by driving the "U" contact down into the connector.
- As the "U" contact is pressed into the connector, it grasps the conductors as it displaces the insulation.
- Contact grips the conductor and holds with a firm, resilient pressure.

Specification Information for 3M™ Scotchlok™ Insulation Displacement Connectors

Connector	Type Connection	Features/Description	Maximum Insulation O.D.	AWG (mm ²) Wire Range	Operating Temperature	UL, CSA or CE Certified	Suggested 3M Tools/Mate
314*		 Moisture-resistant seal	0.155" (3,9 mm)	22-14 (0,5-1,5)	221°F (105°C)	UL SF ^{††}	E-9BM
314U*		 Dry environment applications	0.155" (3,9 mm)	22-14 (0,5-1,5)	221°F (105°C)	UL SF ^{††}	E-9BM
316IR		 Moisture-resistant applications	0.155" (3,9 mm)	22-16 (0,5-1,0)	221°F (105°C)	N/A	E-9BM
557		 Dual element connection Flame retardant	0.120" (3,05 mm)	22-16 (0,5-1,5)	221°F (105°C)	UL SF CE ^{††}	E-9BM
558		 Flame retardant	0.120" (3,05 mm)	22-16 (0,5-1,0)	221°F (105°C)	UL SF CE ^{††}	E-9BM
560		 Flame retardant	0.145" (3,68 mm)	18-16 (0,75-1,0) Solid/Stranded 14 (1,5) Stranded	221°F (105°C)	UL SF CE ^{††}	E-9BM
560B		 Run and Tap Splicing	0.145" (3,68 mm)	18-16 (0,75-1,0) Solid/Stranded 14 (1,5) Stranded	194°F (90°C)	UL ^{††}	E-9BM
560N		 Flame retardant	0.145" (3,68 mm)	18-16 (0,75-1,0) Solid/Stranded 14 (1,5) Stranded	221°F (105°C)	UL SF ^{††}	E-9BM
562		 Run and Tap Splicing	0.190" (4,82 mm)	12 (2,5) Solid/Stranded 10 (4,0) Stranded	194°F (90°C)	UL CE ^{††}	E-9BM
564		 Double Run	0.145" (3,68 mm)	18-14 (0,75-1,5)	194°F (90°C)	CE	E-9BM
567		 Dual element connection Flame retardant	0.145" (3,68 mm) Tap 0.190" (4,82 mm) Run	18-14 (0,75-1,5) Tap 12-10 (2,5-4,0) Run	221°F (105°C)	UL SF CE ^{††}	E-9BM
804		 Moisture-resistant applications	0.145" (3,68 mm)	18-16 (0,75-1,5) Solid/Stranded 14 (1,5) Stranded	167°F (75°C)	UL ^{††}	E-9BM
901		 Disconnect	0.145" (3,68 mm)	18-14 (0,75-1,5)	194°F (90°C)	N/A	E-9BM
905		 Low voltage (automotive) applications	0.110" (2,79 mm) Tap 0.145" (3,68 mm) Run	22-18 (0,5-0,75) Tap 18-14 (0,75-1,5) Run	194°F (90°C)	CE	E-9BM MNG14-156DM
905N		 Low voltage (automotive) applications	0.110" (2,79 mm) Tap 0.145" (3,68 mm) Run	22-18 (0,5-0,75) Tap 18-14 (0,75-1,5) Run	194°F (90°C)	N/A	E-9BM
951		 T-tap disconnect	0.150" (3,81 mm)	22-18 (0,5-0,75)	221°F (105°C)	UL SF [†]	E-9BM Mate: 0.250" male tab MNG18-250 DMI
952		 T-tap disconnect	0.150" (3,81 mm)	18-14 (0,75-1,5)	221°F (105°C)	UL SF [†]	E-9BM Mate: 0.250" male tab MNG14-250 DMI
953		 T-tap disconnect	0.150" (3,81 mm)	12 (3,0)	221°F (105°C)	UL SF [†]	E-9BM Mate: 0.250" male tab MNG10-250 DMI
972		 Auto fuse holder	0.150" (3,81 mm)	18-14 (0,75-1,5)	194°F (90°C)	N/A	E-9BM

*Also tested in accordance with UL Standard for Portable Electric Lamps, UL 153, Section 15 when housed within the body of the lamp.







































[†] UL Listed 70512 and/or CSA Certified LR15503

^{††} UL Listed 23438 and/or CSA Certified LR15503

Ordering Information for 3M™ Scotchlok™ Insulation Displacement Connectors


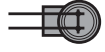

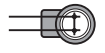
Product Number	UPC (054007-)	Inner Unit Pack	Distributor Order Quantity
314	09230	50/box	500 conn
	09231	—	1,000 conn
314U	09232	50/box	500 conn
	09233	—	1,000 conn
316-IR	50419	30/bag	300 conn
557	21494	100/box	1,000 conn
	21502	500/bag	5,000 conn
558	14861	100/box	1,000 conn
	14879	500/bag	5,000 conn
560	00839	100/box	1,000 conn
	00840	500/bag	5,000 conn
560B	20090	100/box	1,000 conn
	20181	500/bag	5,000 conn
560N	09513	500/bag	5,000 conn
562	11032	100/box	1,000 conn
	11040	—	1,000 conn
564	06118	500/bag	5,000 bulk
567	14887	100/box	1,000 conn
	14895	—	1,000 conn
804	06134	25/box	250 box
	06135	—	5,000 conn
	50187	50/bag	1,000 conn
	50188	100/bag	1,000 conn
901	06106	50/box	10 boxes
	06107	5000/ctn	1 ctn
905	06128	50/box	10 boxes
	06129	5000/ctn	1 ctn
905N	06124	5000/ctn	1 ctn
951	12312	50/box	500 conn
	12313	—	1,000 conn
952	08427	50/box	500 conn
	08428	—	1,000 conn
953	12314	50/box	500 conn
	12315	—	1,000 conn
972	06171	25/box	10 boxes
	06172	—	1,000 conn

Specification Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

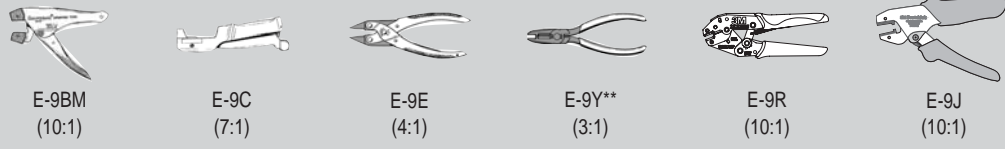
	Connector	Type Connector	Features	Maximum Insulation	PIC-unified and PIC-filled AWG (mm)	Pulp or Paper AWG (mm)	
Butt Splicing	UAL			Gel-filled For Aluminum Polycarbonate Center port	0.082" (2,08 mm) Outside port 0.076" (1,93 mm)	17-20 AL (1.2-0.8 AL) 19-24 CU (0.9-0.5 CU)	N/A
	UP2			Dry Flame Retardant RUS and UL Listed Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	22-26 (0,7-0,4)
	UP3			Dry Flame Retardant Gel-filled Polycarbonate	0.060" (1,52 mm)	19-26 (0,9-0,4)	19-26 (0,9-0,4)
	UR			Gel-filled RUS and UL Listed Polycarbonate	0.060" (1,52 mm)	19-26 (0,9-0,4)	N/A
	UR2			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UR2-D			Dry Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	19-26 (0,9-0,4)
	UY			Gel-filled UL Listed Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	N/A
	UY2			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UY2-D			Dry Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	19-26 (0,9-0,4)
	UYF			Gel-filled UL Listed Polycarbonate	0.060" (1,52 mm)	20-26 (0,8-0,4)	N/A
	211			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	557TG*			Gel-filled Flame Retardant Polypropylene	0.12" (3,0 mm)	16-22 (1,3-0,6)	N/A
Tap Splicing	UB2A			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UB2A-D			Gel-filled RUS Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UG			Gel-filled RUS Listed Polycarbonate	Butt 0.051" (1,54 mm) Tap 0.044" (1,12 mm)	19-26 (0,9-0,4) 22-26 (0,7-0,4)	N/A
	UPB			Dry UL Listed Polycarbonate Flame Retardant	0.050" (1,27 mm)	22-26 (0,7-0,4)	22-26 (0,7-0,4)
Inline Splicing	UDW2*			Full Pair Drop Pair Polycarbonate	0.175" (4,4 mm)	16-19 (1,3-0,9)	N/A
	U1B*			Gel-filled Full Pair Polycarbonate	0.125" (3,18 mm)	16-19 (1,3-0,9)	N/A
	U1R*			Gel-filled Full Pair Polycarbonate	0.125" (3,18 mm)	19-24 (0,9-0,5)	N/A

*Inline and drop wire connectors can only be used with E-9BM.
**Not recommended for 19 gauge (0.9mm) conductor and larger.

Specification Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

Connector	Type Connector	Features	Maximum Insulation	PIC-unified and PIC-filled AWG (mm)	Pulp or Paper AWG (mm)	
UCC			Gel-filled RUS and UL Listed Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	N/A
UPC			UL Listed Flame Retardant Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	22-26 (0,7-0,4)

To reduce fatigue, use tool within each group with highest mechanical advantage, indicated in ().



**Not recommended for 19 gauge (0.9mm) conductor and larger.

Ordering Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

Connector	Box Packaging Weight kg (lbs.) Minimum Order UPC Code	Bulk Packaging Weight kg (lbs.) Minimum Order UPC Code	Cartridge Packaging Weight kg (lbs.) Minimum Order UPC Code
UAL	N/A N/A N/A N/A	N/A N/A N/A N/A	10/cart, 100/pak., 1000/cs. 2.1 (4.7) Min. Order: 1000 connectors 05400727828
UP2	N/A N/A N/A N/A	1000/box, 5000/cs. 2.4 (5.4) Min. Order: 5000 connectors 05400733420	16/cart, 160/pak., 1600/cs. 1.4 (3.2) Min. Order: 1600 connectors 05400732698
UP3	N/A N/A N/A N/A	1000/box, 5000/cs. 7.1 (13.3) Min. Order: 5000 connectors 05400733419	10/cart, 100/pak., 1000/cs. 2.0 (4.4) Min. Order: 1000 connectors 05400732700
UR	100/box, 1000/cs. 1.36 (3) Min. Order: 1000 connectors 05400768537	500/box, 5000/cs. 6.7 (15.2) Min. Order: 5000 connectors 05400768535	10/cart, 100/pak., 1000/cs. 2.09 (4.6) Min. Order: 1000 connectors 05400768534
UR2	100/box, 1000/cs. 1.36 (3) Min. Order: 1000 connectors 05400768538	500/box, 5000/cs. 6.7 (15.2) Min. Order: 5000 connectors 05400756390	10/cart, 100/pak., 1000/cs. 2.09 (4.6) Min. Order: 1000 connectors 05400768541
UR2-D	N/A N/A N/A N/A	500/box, 5000/cs. 6.7 (15.2) Min. Order: 5000 connectors 05400733277	10/cart, 100/pak., 1000/cs. 2.09 (4.6) Min. Order: 1000 connectors 05400727816
UY	100/box, 1000/cs. 0.9 (1.3) Min. Order: 1000 connectors 05400714911	1000/box, 5000/cs. 2.8 (6.1) Min. Order: 5000 connectors 05400733278	16/cart, 160/pak., 1600/cs. 1.4 (3.5) Min. Order: 1600 connectors 05400727817
UY2	100/box, 1000/cs. 0.9 (1.3) Min. Order: 1000 connectors 05400714911	1000/box, 5000/cs. 2.8 (6.1) Min. Order: 5000 connectors 05400733278	12/cart, 120/pak., 1200/cs. 1.4 (3.5) Min. Order: 1200 connectors 05400727817
UY2-D	N/A N/A N/A N/A	1000/box, 5000/cs. 2.8 (6.1) Min. Order: 5000 connectors 05113857359	12/cart, 120/pak., 1200/cs. 1.4 (3.5) Min. Order: 1200 connectors 05400771478
UYF	500/box, 2500/cs. 2.15 (4.75) Min. Order: 2500 connectors 05111518516	N/A N/A N/A N/A	N/A N/A N/A N/A
211	100/box, 1000/cs. 1.2 (2.6) Min. Order: 1000 connectors 05400734079	N/A N/A N/A N/A	N/A N/A N/A N/A

Ordering Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

Connector	Box Packaging Weight kg (lbs.) Minimum Order UPC Code	Bulk Packaging Weight kg (lbs.) Minimum Order UPC Code	Cartridge Packaging Weight kg (lbs.) Minimum Order UPC Code
UB2A	100/box, 1000/cs. 1.2 (2.6) Min. Order: 1000 connectors 05400792693	500/box, 5000/cs. 5.9 (12.9) Min. Order: 5000 connectors 05400792696	N/A N/A N/A N/A
UB2A-D	100/box, 1000/cs. 1.2 (2.6) Min. Order: 1000 connectors 05400792694	500/box, 5000/cs. 5.9 (12.9) Min. Order: 5000 connectors 05400757279	N/A N/A N/A N/A
UG	100/box, 1000/cs. 1.1 (2.5) Min. Order: 1000 connectors 05400756391	1000/box, 5000/cs. 5.2 (11.6) Min. Order: 5000 connectors 05400733280	N/A N/A N/A N/A
UPB	100/box, 1000/cs. 0.6 (1.4) Min. Order: 1000 connectors 05400734173	1000/box, 5000/cs. 3.0 (6.6) Min. Order: 5000 connectors 05400733416	N/A N/A N/A N/A
UDW2	25/bag, 100/box N/A Min. Order: 1000 connectors 05113811505	N/A N/A N/A N/A	N/A N/A N/A N/A
U1B	100/box, 1000/cs. 7.3 (16.0) Min. Order: 5000 connectors 05400771340	N/A N/A N/A N/A	N/A N/A N/A N/A
U1R	100/box, 1000/cs. 7.4 (16.2) Min. Order: 2500 connectors 05400756388	N/A N/A N/A N/A	N/A N/A N/A N/A
UCC	N/A N/A N/A N/A	1000/box, 5000/cs. 2.6 (5.2) Min. Order: 5000 connectors 05400733417	16/cart, 160/pak., 1600/cs. 1.6 (3.5) Min. Order: 1600 connectors 05400731734
UPC	N/A N/A N/A N/A	1000/box, 5000/cs. 2.3 (5.0) Min. Order: 5000 connectors 05400733419	16/cart, 160/pak., 1600/cs. 1.5 (3.0) Min. Order: 1600 connectors 05400733721

Ordering Information for 3M™ Application Tools

Tools	E-9BM Crimping Tool	E-9C Cartridge Tool	E-9R Crimping Tool	E-9E Crimping Tool	E-9Y Crimping Tool*	E-9J Crimping Tool
Packaging kg (lbs.)/cs.	4.3 (9.5)	1/cs., 0.91 (2)	1/bag, 10/cs., 2.59 (5.7)	1/bag, 10/cs., 2.7 (6)	1/bag, 10/cs., 1.53 (3.3)	1/bag, 10/cs., 4.1 (9.02)
Minimum Order	10 each	1 each	10 each	10 each	10 each	10 each
UP Code	054007-33482	054007-34211	051138-87649	054007-10577	054007-15625	051115-19004-9

* Not recommended for 19 AWG and larger.

3M Wire Connectors

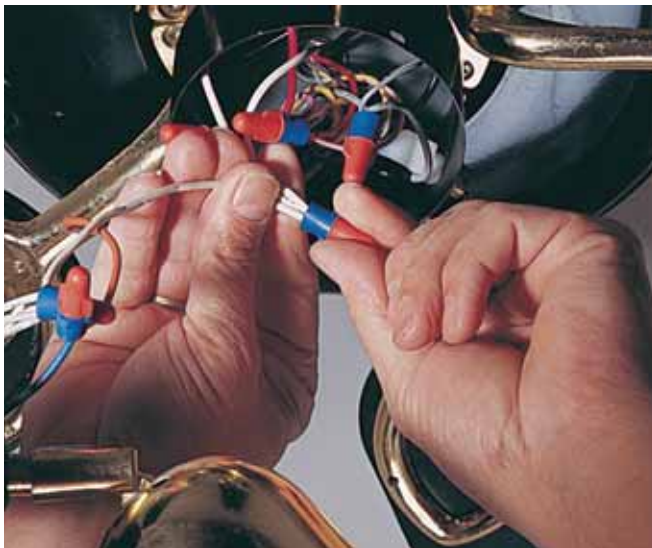
Spring Connectors and Tools	96	Insulation Displacement Connectors and Tools	102
Crimp Sleeve Connectors	100		
Direct Bury Products and Sealing Pack	101		

The best connectors do more than fit the application; they also fit your hand, and they feel good to use. At 3M, we design connectors that are as comfortable and easy to use as they are dependable.

Our complete line provides a wide range of connector choices. Simply choose the connector that fits your personal preference, as well as the application. We give you plenty of choices.

Start with the unique Performance Plus wire connectors. See just how easy it is to work with three sizes instead of seven, and still cover the entire 600-volt copper wire range. The Scotchlok™ connectors are our original color-coded line of wire connectors designed with the exact features requested most by electricians. 3M wire connectors are hardy for regular or low-voltage systems in construction, industrial, maintenance, OEM or irrigation. Highland™ wire connectors offer an affordable alternative with no compromise to quality.

It's all here — right at your fingertips — with 3M's family of easy-to-use, versatile and highly reliable wire connectors.



Quick, reliable splices are a snap and a squeeze

For over 30 years, 3M has been designing connectors with the reliability and ease of installation that electricians demand. From the very first Scotchlok insulation displacement connector (IDC) to today's improved models, 3M has always provided connection technology that saves time and money.

The latest series of IDCs has kept all that was good about the original connector — the design, the shape, the element technology and the color-coding.

Choose from 38 different 3M IDCs that meet a variety of uses; including fluorescent ballast installation and replacement, fixture and appliance wiring, automotive and marine wiring, and control circuit wiring. Whatever the application, 3M has the connector to make your job easier.

Spring Connectors and Tools

3M™ “Performance Plus” Wire Connectors (T/R+, T/Y+, O/B+, R/Y+, B/G+)



Because of their increased wire range, just four “Performance Plus” Wire Connectors handle the work of seven standard connectors. T/R+ replaces the yellow, tan and red connectors in the majority of field applications. T/Y+ replaces yellow, orange, blue and gray wire nuts. O/B+ replaces the orange, blue and gray wire nut style connectors, as well as 70% of the yellow wire nut and wing style connectors. R/Y+ replaces both red and yellow wing style connectors. B/G+ covers both the large blue and gray connectors. This simplifies selection of the right connector for a wide range of wiring jobs. There’s also less inventory to manage, and a better chance you’ll have the connector you need to do every job.

3M™ Scotchlok™ Electrical Spring Connectors Y, R, G and B



Scotchlok Electrical Spring Connectors Y, R, G and B are the original color-coded wire connectors with a unique soft shell that is easy on the fingers. They’re flexible,

yet durable, and provide a compact, fully-insulated connection that won’t cut or abrade wires. Their torque fins are engineered to provide a comfortable and secure grip, which makes installation fast and back-off easy.

3M™ Electrical Spring and Grounding Connectors 312, 412, 512 and 512G



The quick-spin, wing-torque design of Electrical Spring and Grounding Connectors 312, 412 and 512 is easy on your fingers. The day’s last connection will

feel almost as good as the first. Generous expansion room accommodates a wide range of solid or stranded wire. Use the 312 (yellow) connector for wire combinations from 3 #20 to 3 #12 AWG, the 412 connector for 2 #20 to 3 #10 AWG and the 512 (red) connector for 2 #18 to 5 #12 AWG. The 512G (green) is used for grounding connections.



Features — Advantages — Benefits

Spring Connectors

3M “Performance Plus” Wire Connectors (T/R+, T/Y+, O/B+, R/Y+, B/G+)

Wires feed deeper	Increases level of pull out	Security
Wide wire ranges	Three connectors replace seven	Saves money and time
Flexible skirt	Covers overstripped wires	Safety
New internal design	Smoother and faster installation	Improves quality and saves time

Scotchlok Electrical Spring Connectors (Y, R, G, B)

Soft outer shell	Easy on the fingers	Easy to use
Soft inner shell	No wire poke-through	Safety
Compact design	Fit into tight places	Easy to use
Able to back off	Rewire if needed	Saves time

3M Electrical Spring and Grounding Connectors (312, 412, 512, 512G)

Hard shell	Easy to grip	Easy to use
Wings	Easy to turn	Easy to use

Highland™ Wire Connectors (H-29, H-30, H-31, H-33, H-35)

Low price	Economical	Save money
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Highland™ Wire Connectors



Highland Wire Connectors make it quick and easy to match the right connector to the size of the wire.

The shells are designed to withstand temperatures up to 221°F (105°C). Highland color-coded wire connectors are

UL Listed, CSA Certified, and work equally well with either solid or stranded wire. H-29 and H-30 connectors are rated to 300V. H-31, H-33 and H-35 connectors are rated to 600V (1000V in signs and lighting fixtures).

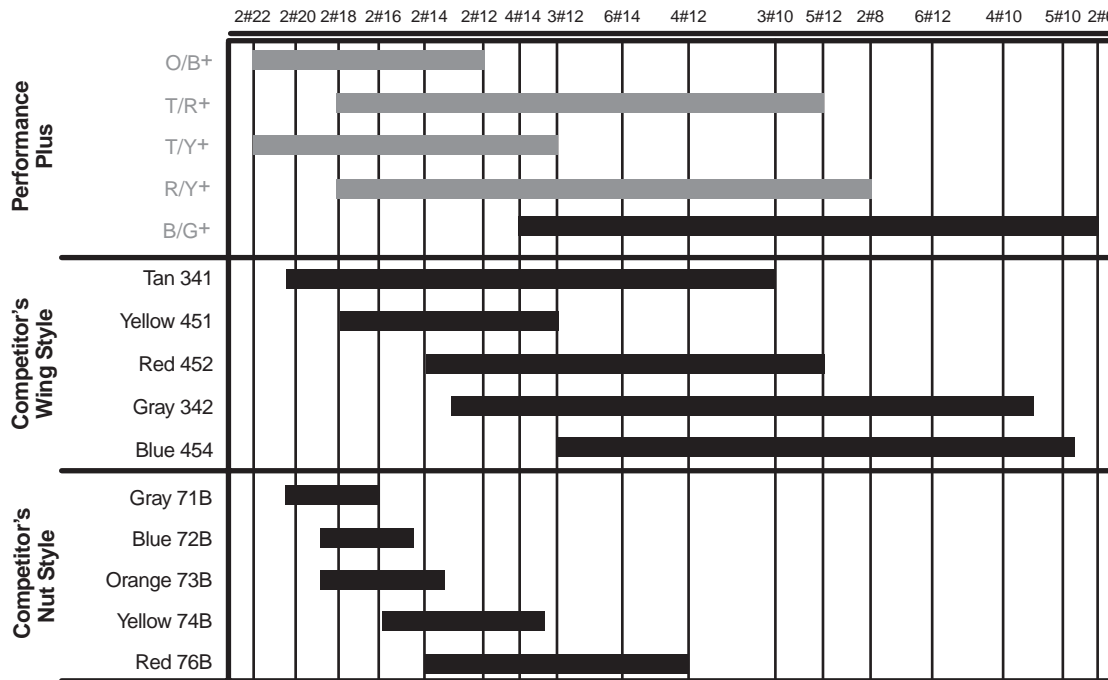
3M™ Wire Connector Drivers WCD


































































These application tools for 3M “Performance Plus” O/B+ and R/Y+; 3M 312, 412, and 512; and Scotchlok™ Y, R, and G connectors quickly spin on the connector and position the wire

bundle in the box. The WCD-H is a hand driver and the WCD-P is a power driver that fits a standard chuck.

Wire Range for 3M “Performance Plus” Wire Connectors



Specification Information for Spring Connectors

Connector	Features/ Description	Maximum Voltage Rating	Wire Range* AWG (mm ²)	Temp. Rating	UL, CSA or CE Certified	Tools
3M™ Connector O/B+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	2#22-2#12 3#14 (1,0 mm ² -5,0 mm ²)	221°F (105°C)	UL  SF  CE  †	WCD-P WCD-H
3M™ Connector T/R+ 	Quick bite, compact size wide wire range	600V (1000V in signs, lighting fixtures and luminaries)	up to 5#12s (2,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  SF  CE  †	WCD-P WCD-H
3M™ Connector T/Y+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	2#22-3#12 3#14 (1,0 mm ² -5,0 mm ²)	221°F (105°C)	UL  SF  CE  †	WCD-P WCD-H
3M™ Connector R/Y+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	2#18-2#8 5#12 (2,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  SF  CE  †	WCD-P WCD-H
3M™ Connector B/G+ 	Flexible skirt w/square wire	600V (1000V in signs, lighting fixtures and luminaries)	4#14-2#6-3#8 (10,0 mm ² -31,6 mm ²)	221°F (105°C)	UL  SF  CE  †	—
3M™ Scotchlok™ Connector R 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	9#18, 4-6#16, 2-5#14, 2-5#12, 1-3#10 (5,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  SF  CE  †	WCD-P WCD-H
3M™ Scotchlok™ Connector Y 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	5-8#22, 4-6#20, 2-5#18, 2-3#16, 1-3#14, 1-2#12, 1#10 (2,0 mm ² -17,5 mm ²)	221°F (105°C)	UL  SF  CE  †	WCD-P WCD-H
3M™ Scotchlok™ Connector B 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	3-6#12, 2-6#10, 2-3#8, 1-2#6 stranded (12,0 mm ² -36,0 mm ²)	221°F (105°C)	UL  SF  CE  †	—
3M™ Scotchlok™ Connector G 	Insulated w/vinyl skirt and live spring	600V (1000V for signs, lighting fixtures and luminaries)	3-7#14, 2-6#12, 2-4#10, 2#8 (8,0 mm ² -24,0 mm ²)	221°F (105°C)	UL  SF  CE  †	WCD-P WCD-H
3M™ Connector 312 	Nylon Insulated w/live spring	600V (1000V for signs, lighting fixtures and luminaries)	5-7#22, 3-6#20, 2-6#18 2-6#16, 1-4#14, 1-3#12 (1,5 mm ² -10,0 mm ²)	221°F (105°C)	UL  SF  †	WCD-P WCD-H
3M™ Connector 412 	Nylon Insulated w/live spring	600V (1000V for signs, lighting fixtures and luminaries)	5-7#22, 3-6#20, 2-6#18 2-6#16, 1-4#14, 1-3#12 (1,5 mm ² -10,0 mm ²)	221°F (105°C)	UL  SF  †	WCD-P WCD-H
3M™ Connector 512 	Nylon insulated w/live spring	600V (1000V for signs, lighting fixtures and luminaries)	2-10#18, 2-7#16, 1-6#14, 1-5#12, 1-3#10, 1-2#8, 1#6 (2,0 mm ² -16,0 mm ²)	221°F (105°C)	UL  SF  †	WCD-P WCD-H
3M™ Connector 512G 	Nylon insulated grounding connector	600V (1000V for signs, lighting fixtures and luminaries)	2-5#14, 2-5#12, 2-3#10, 1#14 w/ 1-4#12, 2#14 w/1-3#12, 3#14 w/2 or 3 #12, 4#14 w/1#12, 1#14 w/1-3#10, 2#14 w/1 or 2#10, 3#14 w/1#10, 1#12 w/1 or 2#10, 2#12 w/1#10 (4,0 mm ² -15,0 mm ²)	221°F (105°C)	UL  SF  †	—
3M™ Highland™ Connector H-29 	Round wire spring	300V	22-16 AWG [One 22 AWG/One 20 AWG Min.] [Two 16 AWG Max.] (1,5 mm ² -2,5 mm ²)	221°F (105°C)	UL  SF 	—
3M™ Highland™ Connector H-30 	Round wire spring	300V	22-16 AWG [Three 20 AWG Min.] [Three 16 AWG Max.] (1,5 mm ² -3,0 mm ²)	221°F (105°C)	UL  SF 	—
3M™ Highland™ Connector H-31 	Round wire spring	600V (1000V in signs, lighting fixtures and luminaries)	18-14 AWG [Two 18 AWG Min.] [Two 14 AWG Max.] (2,0 mm ² -4,0 mm ²)	221°F (105°C)	UL  SF 	—
3M™ Highland™ Connector H-33 	Round wire spring	600V (1000V in signs, lighting fixtures and luminaries)	18-12 AWG [Two 18 AWG Min.] [Three 14 AWG Max.] (2,0 mm ² -0,5 mm ²)	221°F (105°C)	UL  SF 	—
3M™ Highland™ Connector H-35 	Round wire spring	600V (1000V in signs, lighting fixtures and luminaries)	18-10 AWG [Three 18 AWG Min.] [Three 10 AWG Max.] (2,5 mm ² -16,0 mm ²)	221°F (105°C)	UL  SF 	—

*For information on additional Cu wire connections, refer to package or consult 3M technical service.

† UL Listed E23438 and CSA Certified LR15503

Ordering Information for Spring Connectors

Product Number	UPC (054007-)	Inner Unit Pack	Case Qty. (connectors)
O/B+	43152	100/box	1,000 box
	43153	500/container	10,000 bulk
T/R+	54454	100/box	1,000 box
	54455	750/jug	6,000 jug
	54456	25,000/keg	25,000 keg
T/Y+	55219*	500/jug	10,000 jug
	55218*	100/box	1,000 box
R/Y+	43154	100/box	1,000 box
	43155	500/container	4,000 bulk
B/G+	43150	50/box	500 box
	43151	250/container	2,000 bulk
R	20058	100/box	1,000 box
	70489	500/bag	5,000 bulk
Y	20041	100/box	1,000 box
	15769	500/bag	10,000 bulk
B	42033	50/box	500 box
G	21346	100/box	1,000 box
	70488	500/bag	2,500 bulk
312 (Yellow)	08159	100/box	1,000 box
	08160	500/bag	10,000 bulk
412	54451*	100/box	1,000 box
	54452*	500/bag	10,000 bulk
512 (Red)	08161	100/box	1,000 box
	08162	500/bag	10,000 bulk
512G (Green)	49950	50/box	500 box
	50232	500/bag	10,000 bulk
H-29 (Gray)	43133	100/box	1,000 box
	43134	-	1,000 bin
	43135	-	25,000 keg (loose)
H-30 (Blue)	43122	100/box	1,000 box
	43123	-	1,000 bin
	43124	-	10,000 keg (loose)
H-31 (Orange)	43117	100/box	1,000 box
	43118	500/bag	10,000 bulk
	43119	-	1,000 bin
	43120	-	10,000 keg
H-33 (Yellow)	43136	100/box	1,000 box
	43138	500/bag	5,000 bulk
	43137	-	1,000 bin
	43139	-	5,000 keg
H-35 (Red)	43140	100/box	1,000 box
	43142	250/bag	2,500 bulk
	43141	-	1,000 bin

*UPC prefix 051128-

Specification and Ordering Information for Application Tools

Product Number	Description	Application	UPC (054007-)	Inner Unit Pack	Case Qty.
WCD-P	Power driver using a standard chuck, drill or screw driver	Tools for 3M™ O/B+, R/Y+, Scotchlok™ Y, R, G and 3M 212, 312, and 512.	49919	-	10
WCD-H	Hand driver	Tools for 3M O/B+, R/Y+, Scotchlok Y, R, G and 3M 212, 312, and 512.	49948	-	10

Crimp Sleeve Connectors

3M™ Scotchlok™ Insulated Electrical Crimp Sleeve Connectors S-11 and S-31

UL Listed and CSA Certified, Scotchlok electrical crimp sleeve connectors make fast work of splicing 22 to 10 AWG copper conductors. Smooth flared entry makes wire insertion fast – simply twist conductors together and crimp. The S-11 and S-31 (copper), and MN14CEC/ST and MN10CEC/ST (steel) are insulated, closed-end crimp sleeve connectors.



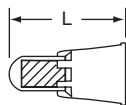
With a rugged, yet resilient nylon insulator, use these connectors in light fixtures, appliances and other electrical OEM applications.

Specification and Ordering Information for Nylon Insulated Closed End Connectors (Steel and Copper Insert)



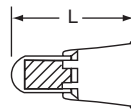
Product Number [†]	UPC (054007-)	Wire Range (AWG)	Copper Wire Combinations	L	Barrel Length	Barrel I.D.
722N (copper)*	29405	22-14	see chart below	0.76	0.31	0.091
722NS (steel)*	29610	22-14	see chart below	0.76	0.31	0.091
718N (copper)*	29406	18-10	see chart below	0.85	0.34	0.152
718NS (steel)*	29611	18-10	see chart below	0.85	0.34	0.152

* UL Listed and CSA Certified for use with TH-440 and TH-450 Crimping Tools.

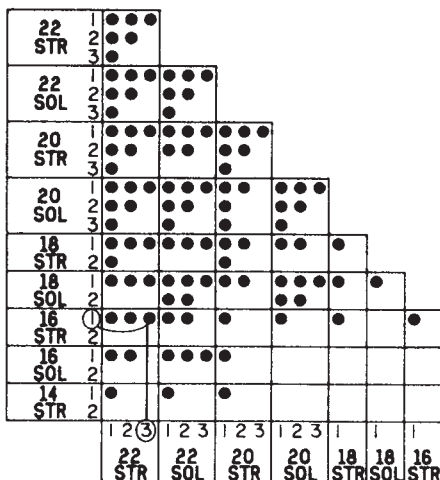


722-N, 722-NS
22-14

Wire Range

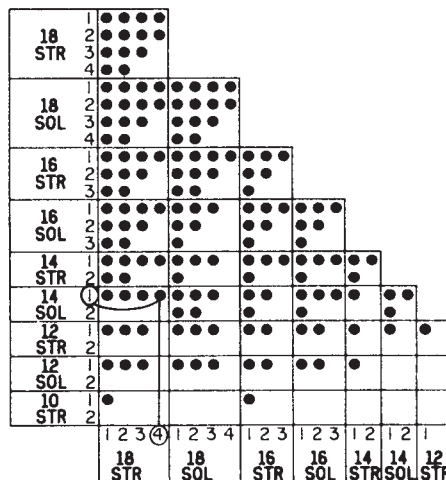


718-N, 718-NS
18-10



How to read chart for 722-N:

One #16 Stranded plus three #22 Stranded (equaling four wires) can be connected using an 722-N connector.



How to read chart for 718-N:

One #14 Solid plus four #18 Stranded (equaling five wires) can be connected using an 718-N connector.

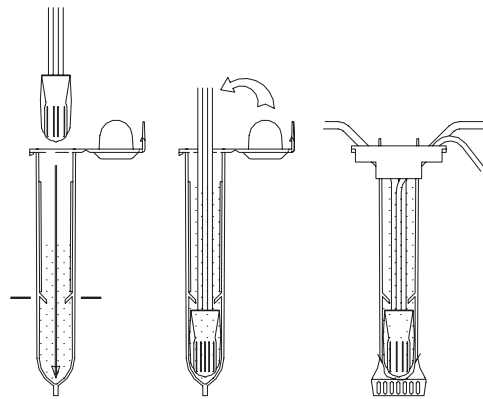
Direct Bury Products and Sealing Pack

3M™ Direct Bury Products

3M DBY/DBR Direct Bury Splice Kits are real time savers when installing underground electrical systems. Every component for the splice is included in the kit. The insulator tube is pre-filled, eliminating the chance of the installer using too much, or too little sealant.

No crimping tools, no waste, no mess. Just quick, reliable underground splices for irrigation and sprinkler systems, landscape lighting and other 30-volt underground projects. The splice may be reentered without cutting the wires (new tube required).

These 3M underground electrical wire connectors splice and effectively moisture-seal two or more conductors for



remote-control circuits in irrigation and landscape lighting systems. **DBY-6 and DBR-6 are UL Listed and CSA Certified for 600V direct bury and submersion applications. UL File No. E102356 and CSA File No.LR91920.** Each kit makes two splices.

Product Referral Generator

Connecting
– 316IR IDC pg.103

Specification Information for 3M Direct Bury Products

Product Number	Description and Kit Contents	Wire Range (AWG)	Volts	Temperature Range	UL File No. E102356 and CSA File No. LR91920
DBR	(2) Tubes (2) Scotchlok™ R Connectors	5#16-3#10 (5,0–16,0 mm ²)	30	32°-120°F (0°-49°C)	n/a
DBR-6	(2) Tubes (2) Scotchlok R Connectors	5#16-3#10 2#12 (5,0–16,0 mm ²)	600	32°-120°F (0°-49°C)	CE UL SF
DBY	(2) Tubes (2) Scotchlok Y Connectors	2-5#18 thru 2#12 (2,0–7,5 mm ²)	30	32°-120°F (0°-49°C)	n/a
DBY-6	(2) Tubes (2) Scotchlok Y Connectors	2-5#18 thru 2#12 (2,0–7,5 mm ²)	600	32°-120°F (0°-49°C)	CE UL SF
3570G	Connector sealing pack containing 3M Scotchcast 400 epoxy resin	Accommodates 3M O/B+, R/Y+, Scotchlok Y, R, G, B and 3M 212, 312, 512	30	n/a	n/a

Ordering Information for 3M Direct Bury Products

Product Number	UPC (054007-)	Inner Unit Pack	Case Qty.
DBR	09964	Kit- 2 Tubes and 2 Scotchlok R Connectors 100 tubes and 100 connectors	25 kits 100 each
DBR-6	69756	Kit- 2 Tubes and 2 Scotchlok R Connectors 100 tubes and 100 connectors	25 kits 100 each
DBY	09053	Kit- 2 Tubes and 2 Scotchlok Y Connectors 100 tubes and 100 connectors	25 kits 100 each
DBY-6	69757	Kit- 2 Tubes and 2 Scotchlok Y Connectors 100 tubes and 100 connectors	25 kits 100 each
3570G	53241*	10/box	100 each

* UPC prefix 051128-

Insulation Displacement Connectors and Tools

3M™ Scotchlok™ Connectors IDC for Electrical Applications



The latest series of Scotchlok Insulation Displacement Connectors (IDCs) has kept all that was good about the original connector — the design, the shape, the element technology and the color-coding. Each model,

however, also incorporates a full wire range capability, an increased port size that accommodates up to 0.155" (4,0 mm) insulation sizes, double "U" elements and a solvent-resistant plastic construction. Choose from 38 different 3M IDCs to meet a variety of uses; including fluorescent ballast installation and replacement, fixture and appliance wiring, automotive and marine wiring, and control circuit wiring.

Scotchlok Connectors IDC for Communication Applications



Over 30 years ago, 3M introduced the industry's original U element connector, the Scotchlok Connector UR. The latest series of connectors; the Scotchlok connectors UR2,



UY2 and UB2A; features that same originality in technological advantages, building on the successful Scotchlok connector's design, shape, color-coded cap concepts and element technology. The Series 2 connectors additionally

offer full wire range capability, increased port size to accommodate up to 0.082" (2,08 mm) insulation sizes, double elements in all products and a solvent-resistant plastic construction.

3M™ Crimping Tools E-9BM, E-9C, E-9E, E-9Y and E-9R

The Crimping Tool E-9BM is used with most Scotchlok connectors, and has parallel closing action with adjustable jaws and a high mechanical advantage. The Cartridge Tool E-9C with Case holds connectors (in cartridges) firmly in place, allowing the craftsman use of the other hand for guiding wires. A time saving tool, the E-9C tool holds cartridges of UR2, UR, UY2, UY, or UAL connectors. The Crimping Tool E-9E is a parallel closing-action tool for use with Scotchlok butt and tap connectors. The Crimping Tool's E-9Y stepped jaws and long nose provide parallel crimping



action. Its features include a side wire cutter, cushioned handles and a return spring. The Crimping Tool E-9R features single-stroke, parallel crimping action with a work-saving 10:1 mechanical advantage over applied hand force. The tool's innovative ratchet-

release design indicates a positive crimp by automatically releasing after each successful connection. The E-9R tool is compatible with all 3M™ Scotchlok™ Connectors including UY, UR, UY2, UR2, UP2, UAL, UP3, UB, 211 and UB2A units across the entire range of applicable wire sizes.



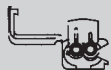
Features — Advantages — Benefits

Insulation Displacement Connectors

Squeeze-shut connector	No wire stripping or twisting	Saves time
Crimp with slip-joint pliers	No special tools required	Saves money
Unique "U" contact, fully insulated	Provides dependable connections	Safety
No need to cut run wire	Faster installation, minimum clean up	Saves time
No need to twist on	Easy on hands	Easy to use



Connecting Tips



Quick, reliable splices are a squeeze. And a snap.




3M Scotchlok Insulation Displacement Connectors (IDCs) are easy to use and save time — to install one, just squeeze — no stripping or twisting. Our unique "U" contact provides a dependable electrical connection.



- A "live-spring" joint is made by driving the "U" contact down into the connector.
- As the "U" contact is pressed into the connector, it grasps the conductors as it displaces the insulation.
- Contact grips the conductor and holds with a firm, resilient pressure.

Specification Information for 3M™ Scotchlok™ Insulation Displacement Connectors

Connector	Type Connection	Features/Description	Maximum Insulation O.D.	AWG (mm ²) Wire Range	Operating Temperature	UL, CSA or CE Certified	Suggested 3M Tools/Mate
314*		Moisture-resistant seal	0.155" (3,9 mm)	22-14 (0,5-1,5)	221°F (105°C)	UL SF ^{††}	E-9BM
314U*		Dry environment applications	0.155" (3,9 mm)	22-14 (0,5-1,5)	221°F (105°C)	UL SF ^{††}	E-9BM
316IR		Moisture-resistant applications	0.155" (3,9 mm)	22-16 (0,5-1,0)	221°F (105°C)	N/A	E-9BM
557		Dual element connection Flame retardant	0.120" (3,05 mm)	22-16 (0,5-1,5)	221°F (105°C)	UL SF CE ^{††}	E-9BM
558		Flame retardant	0.120" (3,05 mm)	22-16 (0,5-1,0)	221°F (105°C)	UL SF CE ^{††}	E-9BM
560		Flame retardant	0.145" (3,68 mm)	18-16 (0,75-1,0) Solid/Stranded 14 (1,5) Stranded	221°F (105°C)	UL SF CE ^{††}	E-9BM
560B		Run and Tap Splicing	0.145" (3,68 mm)	18-16 (0,75-1,0) Solid/Stranded 14 (1,5) Stranded	194°F (90°C)	UL ^{††}	E-9BM
560N		Flame retardant	0.145" (3,68 mm)	18-16 (0,75-1,0) Solid/Stranded 14 (1,5) Stranded	221°F (105°C)	UL SF ^{††}	E-9BM
562		Run and Tap Splicing	0.190" (4,82 mm)	12 (2,5) Solid/Stranded 10 (4,0) Stranded	194°F (90°C)	UL CE ^{††}	E-9BM
564		Double Run	0.145" (3,68 mm)	18-14 (0,75-1,5)	194°F (90°C)	CE	E-9BM
567		Dual element connection Flame retardant	0.145" (3,68 mm) Tap 0.190" (4,82 mm) Run	18-14 (0,75-1,5) Tap 12-10 (2,5-4,0) Run	221°F (105°C)	UL SF CE ^{††}	E-9BM
804		Moisture-resistant applications	0.145" (3,68 mm)	18-16 (0,75-1,5) Solid/Stranded 14 (1,5) Stranded	167°F (75°C)	UL ^{††}	E-9BM
901		Disconnect	0.145" (3,68 mm)	18-14 (0,75-1,5)	194°F (90°C)	N/A	E-9BM
905		Low voltage (automotive) applications	0.110" (2,79 mm) Tap 0.145" (3,68 mm) Run	22-18 (0,5-0,75) Tap 18-14 (0,75-1,5) Run	194°F (90°C)	CE	E-9BM MNG14-156DM
905N		Low voltage (automotive) applications	0.110" (2,79 mm) Tap 0.145" (3,68 mm) Run	22-18 (0,5-0,75) Tap 18-14 (0,75-1,5) Run	194°F (90°C)	N/A	E-9BM
951		T-tap disconnect	0.150" (3,81 mm)	22-18 (0,5-0,75)	221°F (105°C)	UL SF [†]	E-9BM Mate: 0.250" male tab MNG18-250 DMI
952		T-tap disconnect	0.150" (3,81 mm)	18-14 (0,75-1,5)	221°F (105°C)	UL SF [†]	E-9BM Mate: 0.250" male tab MNG14-250 DMI
953		T-tap disconnect	0.150" (3,81 mm)	12 (3,0)	221°F (105°C)	UL SF [†]	E-9BM Mate: 0.250" male tab MNG10-250 DMI
972		Auto fuse holder	0.150" (3,81 mm)	18-14 (0,75-1,5)	194°F (90°C)	N/A	E-9BM

*Also tested in accordance with UL Standard for Portable Electric Lamps, UL 153, Section 15 when housed within the body of the lamp.







































[†] UL Listed 70512 and/or CSA Certified LR15503

^{††} UL Listed 23438 and/or CSA Certified LR15503

Ordering Information for 3M™ Scotchlok™ Insulation Displacement Connectors


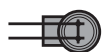

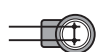
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	09231	—	1,000 conn
314U	09232	50/box	500 conn
	09233	—	1,000 conn
316-IR	50419	30/bag	300 conn
557	21494	100/box	1,000 conn
	21502	500/bag	5,000 conn
558	14861	100/box	1,000 conn
	14879	500/bag	5,000 conn
560	00839	100/box	1,000 conn
	00840	500/bag	5,000 conn
560B	20090	100/box	1,000 conn
	20181	500/bag	5,000 conn
560N	09513	500/bag	5,000 conn
562	11032	100/box	1,000 conn
	11040	—	1,000 conn
564	06118	500/bag	5,000 bulk
567	14887	100/box	1,000 conn
	14895	—	1,000 conn
804	06134	25/box	250 box
	06135	—	5,000 conn
	50187	50/bag	1,000 conn
	50188	100/bag	1,000 conn
901	06106	50/box	10 boxes
	06107	5000/ctn	1 ctn
905	06128	50/box	10 boxes
	06129	5000/ctn	1 ctn
905N	06124	5000/ctn	1 ctn
951	12312	50/box	500 conn
	12313	—	1,000 conn
952	08427	50/box	500 conn
	08428	—	1,000 conn
953	12314	50/box	500 conn
	12315	—	1,000 conn
972	06171	25/box	10 boxes
	06172	—	1,000 conn

Specification Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

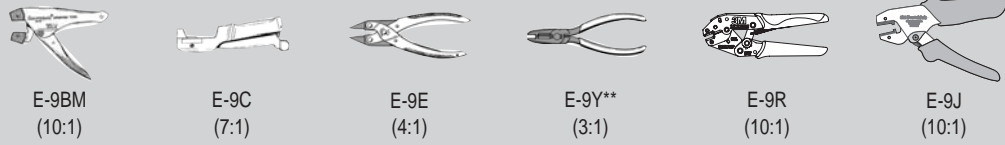
	Connector	Type Connector	Features	Maximum Insulation	PIC-unified and PIC-filled AWG (mm)	Pulp or Paper AWG (mm)	
Butt Splicing	UAL			Gel-filled For Aluminum Polycarbonate Center port	0.082" (2,08 mm) Outside port 0.076" (1,93 mm)	17-20 AL (1.2-0.8 AL) 19-24 CU (0.9-0.5 CU)	N/A
	UP2			Dry Flame Retardant RUS and UL Listed Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	22-26 (0,7-0,4)
	UP3			Dry Flame Retardant Gel-filled Polycarbonate	0.060" (1,52 mm)	19-26 (0,9-0,4)	19-26 (0,9-0,4)
	UR			Gel-filled RUS and UL Listed Polycarbonate	0.060" (1,52 mm)	19-26 (0,9-0,4)	N/A
	UR2			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UR2-D			Dry Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	19-26 (0,9-0,4)
	UY			Gel-filled UL Listed Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	N/A
	UY2			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UY2-D			Dry Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	19-26 (0,9-0,4)
	UYF			Gel-filled UL Listed Polycarbonate	0.060" (1,52 mm)	20-26 (0,8-0,4)	N/A
	211			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	557TG*			Gel-filled Flame Retardant Polypropylene	0.12" (3,0 mm)	16-22 (1,3-0,6)	N/A
Tap Splicing	UB2A			Gel-filled RUS and UL Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UB2A-D			Gel-filled RUS Listed Polypropylene	0.082" (2,08 mm)	19-26 (0,9-0,4)	N/A
	UG			Gel-filled RUS Listed Polycarbonate	Butt 0.051" (1,54 mm) Tap 0.044" (1,12 mm)	19-26 (0,9-0,4) 22-26 (0,7-0,4)	N/A
	UPB			Dry UL Listed Polycarbonate Flame Retardant	0.050" (1,27 mm)	22-26 (0,7-0,4)	22-26 (0,7-0,4)
Inline Splicing	UDW2*			Full Pair Drop Pair Polycarbonate	0.175" (4,4 mm)	16-19 (1,3-0,9)	N/A
	U1B*			Gel-filled Full Pair Polycarbonate	0.125" (3,18 mm)	16-19 (1,3-0,9)	N/A
	U1R*			Gel-filled Full Pair Polycarbonate	0.125" (3,18 mm)	19-24 (0,9-0,5)	N/A

*Inline and drop wire connectors can only be used with E-9BM.
**Not recommended for 19 gauge (0.9mm) conductor and larger.

Specification Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

Connector	Type Connector	Features	Maximum Insulation	PIC-unified and PIC-filled AWG (mm)	Pulp or Paper AWG (mm)	
UCC			Gel-filled RUS and UL Listed Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	N/A
UPC			UL Listed Flame Retardant Polycarbonate	0.060" (1,52 mm)	22-26 (0,7-0,4)	22-26 (0,7-0,4)

To reduce fatigue, use tool within each group with highest mechanical advantage, indicated in ().



**Not recommended for 19 gauge (0.9mm) conductor and larger.

Ordering Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

Connector	Box Packaging Weight kg (lbs.) Minimum Order UPC Code	Bulk Packaging Weight kg (lbs.) Minimum Order UPC Code	Cartridge Packaging Weight kg (lbs.) Minimum Order UPC Code
UAL	N/A N/A N/A N/A	N/A N/A N/A N/A	10/cart, 100/pak., 1000/cs. 2.1 (4.7) Min. Order: 1000 connectors 05400727828
UP2	N/A N/A N/A N/A	1000/box, 5000/cs. 2.4 (5.4) Min. Order: 5000 connectors 05400733420	16/cart, 160/pak., 1600/cs. 1.4 (3.2) Min. Order: 1600 connectors 05400732698
UP3	N/A N/A N/A N/A	1000/box, 5000/cs. 7.1 (13.3) Min. Order: 5000 connectors 05400733419	10/cart, 100/pak., 1000/cs. 2.0 (4.4) Min. Order: 1000 connectors 05400732700
UR	100/box, 1000/cs. 1.36 (3) Min. Order: 1000 connectors 05400768537	500/box, 5000/cs. 6.7 (15.2) Min. Order: 5000 connectors 05400768535	10/cart, 100/pak., 1000/cs. 2.09 (4.6) Min. Order: 1000 connectors 05400768534
UR2	100/box, 1000/cs. 1.36 (3) Min. Order: 1000 connectors 05400768538	500/box, 5000/cs. 6.7 (15.2) Min. Order: 5000 connectors 05400756390	10/cart, 100/pak., 1000/cs. 2.09 (4.6) Min. Order: 1000 connectors 05400768541
UR2-D	N/A N/A N/A N/A	500/box, 5000/cs. 6.7 (15.2) Min. Order: 5000 connectors 05400733277	10/cart, 100/pak., 1000/cs. 2.09 (4.6) Min. Order: 1000 connectors 05400727816
UY	100/box, 1000/cs. 0.9 (1.3) Min. Order: 1000 connectors 05400714911	1000/box, 5000/cs. 2.8 (6.1) Min. Order: 5000 connectors 05400733278	16/cart, 160/pak., 1600/cs. 1.4 (3.5) Min. Order: 1600 connectors 05400727817
UY2	100/box, 1000/cs. 0.9 (1.3) Min. Order: 1000 connectors 05400714911	1000/box, 5000/cs. 2.8 (6.1) Min. Order: 5000 connectors 05400733278	12/cart, 120/pak., 1200/cs. 1.4 (3.5) Min. Order: 1200 connectors 05400727817
UY2-D	N/A N/A N/A N/A	1000/box, 5000/cs. 2.8 (6.1) Min. Order: 5000 connectors 05113857359	12/cart, 120/pak., 1200/cs. 1.4 (3.5) Min. Order: 1200 connectors 05400771478
UYF	500/box, 2500/cs. 2.15 (4.75) Min. Order: 2500 connectors 05111518516	N/A N/A N/A N/A	N/A N/A N/A N/A
211	100/box, 1000/cs. 1.2 (2.6) Min. Order: 1000 connectors 05400734079	N/A N/A N/A N/A	N/A N/A N/A N/A

Ordering Information for 3M™ Scotchlok™ Insulation Displacement Connectors for Communication

Connector	Box Packaging Weight kg (lbs.) Minimum Order UPC Code	Bulk Packaging Weight kg (lbs.) Minimum Order UPC Code	Cartridge Packaging Weight kg (lbs.) Minimum Order UPC Code
UB2A	100/box, 1000/cs. 1.2 (2.6) Min. Order: 1000 connectors 05400792693	500/box, 5000/cs. 5.9 (12.9) Min. Order: 5000 connectors 05400792696	N/A N/A N/A N/A
UB2A-D	100/box, 1000/cs. 1.2 (2.6) Min. Order: 1000 connectors 05400792694	500/box, 5000/cs. 5.9 (12.9) Min. Order: 5000 connectors 05400757279	N/A N/A N/A N/A
UG	100/box, 1000/cs. 1.1 (2.5) Min. Order: 1000 connectors 05400756391	1000/box, 5000/cs. 5.2 (11.6) Min. Order: 5000 connectors 05400733280	N/A N/A N/A N/A
UPB	100/box, 1000/cs. 0.6 (1.4) Min. Order: 1000 connectors 05400734173	1000/box, 5000/cs. 3.0 (6.6) Min. Order: 5000 connectors 05400733416	N/A N/A N/A N/A
UDW2	25/bag, 100/box N/A Min. Order: 1000 connectors 05113811505	N/A N/A N/A N/A	N/A N/A N/A N/A
U1B	100/box, 1000/cs. 7.3 (16.0) Min. Order: 5000 connectors 05400771340	N/A N/A N/A N/A	N/A N/A N/A N/A
U1R	100/box, 1000/cs. 7.4 (16.2) Min. Order: 2500 connectors 05400756388	N/A N/A N/A N/A	N/A N/A N/A N/A
UCC	N/A N/A N/A N/A	1000/box, 5000/cs. 2.6 (5.2) Min. Order: 5000 connectors 05400733417	16/cart, 160/pak., 1600/cs. 1.6 (3.5) Min. Order: 1600 connectors 05400731734
UPC	N/A N/A N/A N/A	1000/box, 5000/cs. 2.3 (5.0) Min. Order: 5000 connectors 05400733419	16/cart, 160/pak., 1600/cs. 1.5 (3.0) Min. Order: 1600 connectors 05400733721

Ordering Information for 3M™ Application Tools

Tools	E-9BM Crimping Tool	E-9C Cartridge Tool	E-9R Crimping Tool	E-9E Crimping Tool	E-9Y Crimping Tool*	E-9J Crimping Tool
Packaging kg (lbs.)/cs.	4.3 (9.5)	1/cs., 0.91 (2)	1/bag, 10/cs., 2.59 (5.7)	1/bag, 10/cs., 2.7 (6)	1/bag, 10/cs., 1.53 (3.3)	1/bag, 10/cs., 4.1 (9.02)
Minimum Order	10 each	1 each	10 each	10 each	10 each	10 each
UP Code	054007-33482	054007-34211	051138-87649	054007-10577	054007-15625	051115-19004-9

* Not recommended for 19 AWG and larger.

