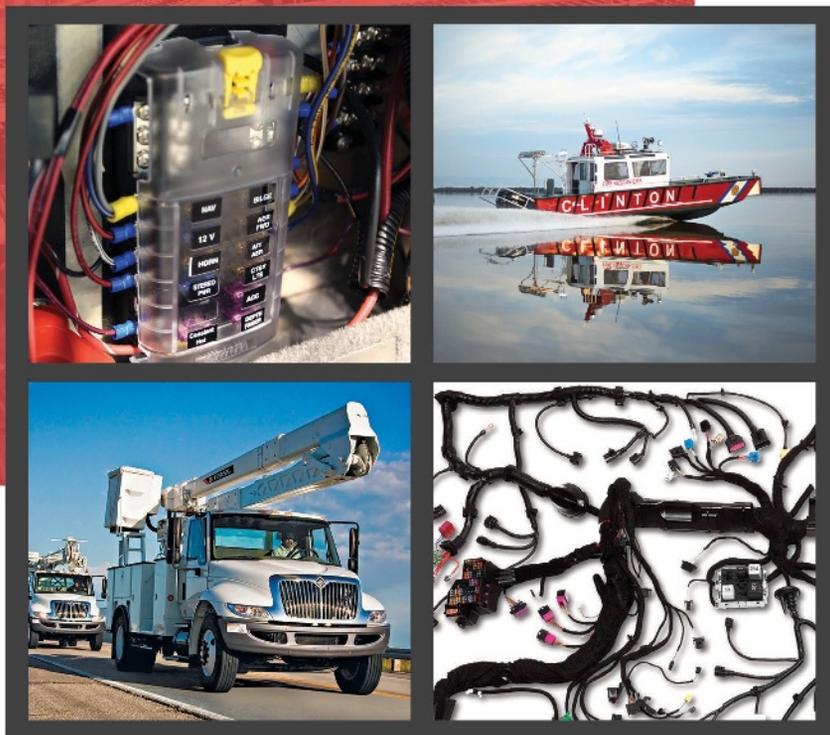


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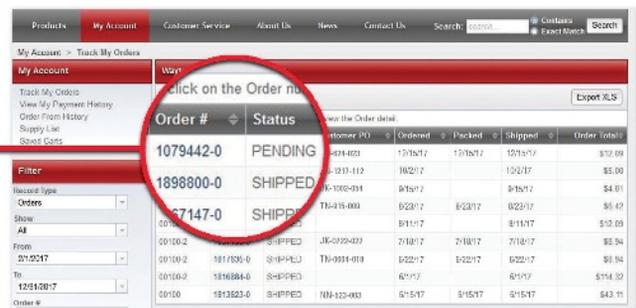
CREATE YOUR WAYTEK ACCOUNT

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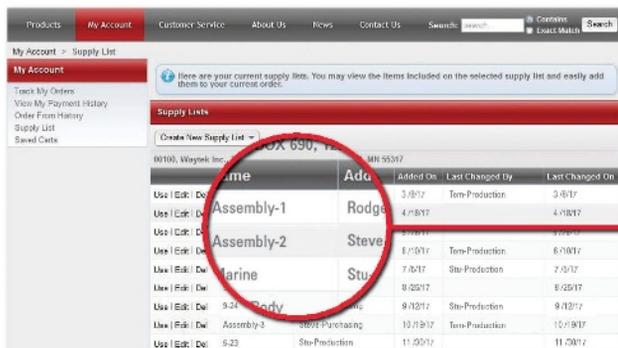
2) TRACK YOUR ORDERS

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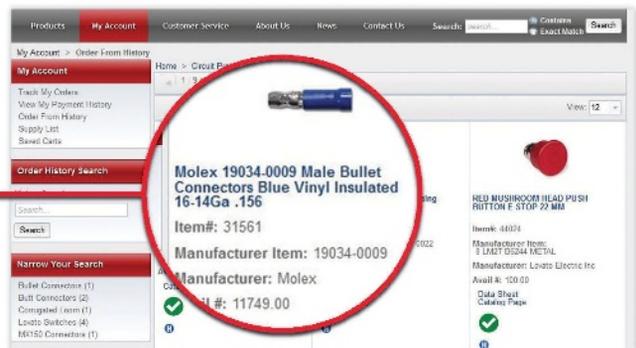
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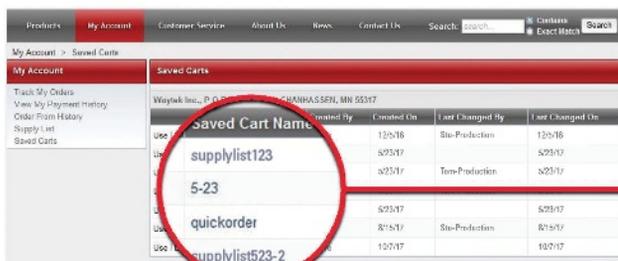
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WHAT'S NEW?

Waytek is Committed to Supporting the Employment of People with Disabilities

In 2017, Waytek was named an Outstanding Disability Employer for its support of MRCI by providing meaningful work for their clients. In conjunction with National Disability Employment month, Waytek was presented the award by the Minnesota Organization for Habilitation and Rehabilitation (MOHR). The award was in recognition of Waytek's partnership with MRCI, a local nonprofit organization dedicated to creating innovative and genuine opportunities for people with disabilities or disadvantages at home, at work and in the community.



In 2018, MRCI honored Waytek for its outstanding commitment to its mission, by presenting the company with a Connections of Excellence award in celebration of MRCI's 65th anniversary.

While we are truly honored to receive this award and to partner with MRCI, the real privilege is in our day-to-day working relationship with the 10 MRCI clients that we incorporate into the greater Waytek team. Their contributions allow Waytek to fulfill our mission of providing an *Exceptional Customer Experience*. Thank you for your continued efforts and your commitment to serving our customers.

2018 SALES TAX UPDATE

In June of 2018, the Supreme Court of the United States handed down its decision in the case of South Dakota v. Wayfair. The case challenged South Dakota's application of its sales tax to retailers who sell into South Dakota but have no property or employees in the state. The Supreme Court found in favor of the State of South Dakota. As a result, Waytek and other retailers are now required to collect sales tax on non-exempt sales of goods shipped to locations in South Dakota, as well as 26 other states (as of January 2019), with the potential for more to join at any time.

If you are exempt from sales tax for any reason allowed by sales tax law, Waytek will need to receive a Certificate of Exemption from you or your company. If you have a certificate please send a copy to our e-mail at ar@waytekwire.com, fax to 800-858-0319, or mail to Waytek at PO Box 690, Chanhassen, MN 55317.

If you currently do not have a Certificate of Exemption, you can access the Sales & Use Tax Exemption / Resale form on our website. Simply complete all sections of the form and include each states

sales tax ID number. If you have deliveries in more than one state, you may use this single form as the Certificate of Exemption.

If you are a reseller of goods and have shipments sent directly from Waytek to your customers in other states, you will need to include your sales tax ID# for those states also.

Unfortunately, if we do not have a certificate for the state you are requesting to ship product to, Waytek will be required to include sales tax.

If you have any sales tax related questions you may want to contact your tax advisor.

ARTICLES

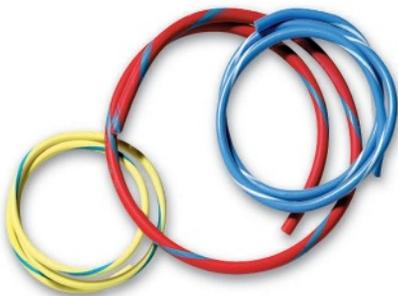
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NEED CUSTOM STRIPING OR PRINTING?

WAYTEK has your custom wiring needs covered for printing and striping in a variety of color options. Whether it is application based text or your company name, we have you covered.

CUSTOM STRIPING

Available on 22-10 ga PVC or cross-linked polyethylene jacketed constructions



CUSTOM PRINTING

Available 22-10 ga PVC or cross-linked polyethylene jacketed constructions and on some multi-conductor wire



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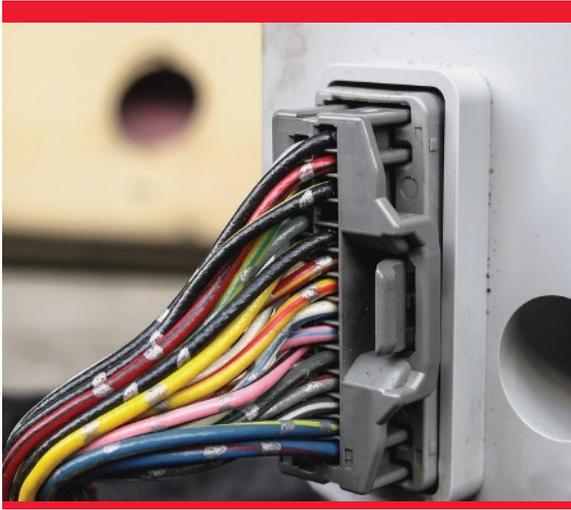
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4 COMMONLY asked questions about Automotive Wire

Wired2Serve™ Blog Article

When buying automotive wire, there's a lot to keep track of. And if you're taking over purchasing, it can be a frustrating experience to untangle jargon and technical terms from the product you need. Here are a few frequent questions we get about automotive wire, and some no-nonsense answers.

What Materials Are Available?

Automotive wire is available in copper stranded wire. Copper stranded wire is heavier but more durable than the lighter but less durable aluminum stranded wire. Depending on the application and amperage you need, you might only be able to secure wire made out of one type of material; consult with your team to make the necessary determinations.

What Types Of Insulation Are Available?

Automotive wire is generally available with either PVC or "cross-linked" insulation, so named because the material is extruded under heat and pressure, changing the molecular structure and allowing it to withstand higher temperatures. Cross-link insulation is generally more durable, while PVC insulation will be more cost-efficient.

As a rule, you should look at how the wire is being used in your shop. Applications that are likely to face extreme high temperatures like engine compartments should use cross-linked wires; general applications can use PVC insulated wire.

What Connections Should I Consider?

Wiring generally has two types of connections; soldered and solderless. Solderless connections will require terminals and connectors, such as spade terminals, ring terminals and quick disconnects. That said, solderless connections won't be effective, or sturdy enough, for all applications, although soldered connections take longer to perform. When ordering wire, make sure it's for the proper application method.

What Role Does Amperage Play In Cable Selection?

As a rule, the longer your wire needs to be for the application and the more power that needs to flow through it, the lower the gauge of the wire. While you should discuss applications with your team before ordering, it's generally recommended to err on the side of thicker wire where possible.

Voltage Drop & Automotive Wire Gauge Guide

Voltage drop can be calculated using Ohm's Law: $Voltage\ Drop = current\ in\ amperes \times resistance\ in\ ohms$.

Wire Gauge	Current Draw In Amps (12 Volt System, 2% Drop)																				
	1	2	3	4	5	7.5	10	15	20	25	30	40	50	60	70	80	90	100	150	200	250
22	14.4	7.2	4.8	3.6	2.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20	23.0	11.5	7.5	5.5	4.5	3.0	2.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	36.5	18.3	12.2	9.1	7.3	4.9	3.7	2.4	X	X	X	X	X	X	X	X	X	X	X	X	X
16	57.5	28.8	19.2	14.4	11.5	7.7	5.8	3.8	2.9	X	X	X	X	X	X	X	X	X	X	X	X
14	92.0	46.0	30.7	23.0	18.4	12.3	9.2	6.1	4.6	3.7	3.1	X	X	X	X	X	X	X	X	X	X
12	X	73.5	49.0	36.8	29.4	19.6	14.7	9.8	7.4	5.9	4.9	3.7	X	X	X	X	X	X	X	X	X
10	X	X	78.0	58.5	46.8	31.2	23.4	15.6	11.7	9.4	7.8	5.9	4.7	X	X	X	X	X	X	X	X
8	X	X	X	93.0	74.4	49.6	37.2	24.8	18.6	14.9	12.4	9.3	7.4	6.2	5.3	X	X	X	X	X	X
6	X	X	X	X	X	78.7	59.0	39.3	29.5	23.6	19.7	14.8	11.8	9.8	8.4	7.4	6.6	5.9	X	X	X
4	X	X	X	X	X	X	94.0	62.7	47.0	37.6	31.3	23.5	18.8	15.7	13.4	11.8	10.4	9.4	X	X	X
2	X	X	X	X	X	X	X	99.5	74.6	59.7	49.7	37.3	29.8	24.9	21.3	18.7	16.6	14.9	9.9	X	X
1	X	X	X	X	X	X	X	X	94.3	75.4	62.8	47.1	37.7	31.4	26.9	23.6	20.9	18.9	12.6	9.4	X
1/0	X	X	X	X	X	X	X	X	X	95.2	79.3	59.5	47.6	39.7	34.0	29.8	26.4	23.8	15.9	11.9	X
2/0	X	X	X	X	X	X	X	X	X	X	100.0	75.0	60.0	50.0	42.9	37.5	33.3	30.0	20.0	15.0	12.0
3/0	X	X	X	X	X	X	X	X	X	X	X	94.5	75.6	63.0	54.0	47.3	42.0	37.8	25.2	18.9	15.1
4/0	X	X	X	X	X	X	X	X	X	X	X	X	95.2	79.3	68.0	59.5	52.9	47.6	31.7	23.8	19.0

Max Length of Wire in Feet

Disclaimer: Many factors can affect the performance of the application, such as voltage, temperature, load, etc. With so many variables, Waytek is providing this wire gauge guide as a general guideline only. Please refer to your design engineer for final decisions.

WIRE & CABLE

Automotive Cross-Link	10	Brake Cable	15
Automotive Primary	11	Can-Bus	15
Battery Cable	12	Multi-Conductor Cable	16
Parallel Battery Cable	13	Speaker Cable	16
Welding Cable	13	Service Cord	17
Trailer Cable	14	Blade Connecting Devices	17
Parallel Bonded Cable	14	UL Hook Up	18





AUTOMOTIVE CROSS-LINK POLYETHYLENE (XLPE) WIRE



- Single conductor, stranded, bare copper
- Insulated with chemically cross-linked polyethylene
- Smooth surface finish
- Resistant to moisture, grease, oil, gasoline, most acids and solvents
- Superior abrasion resistance

Application

- Use in high temperature areas such as engine compartments



Drums and half drums available. Call 800-328-2724 for details.

BARREL CONE

19" High Black Barrel Cone Stock No. 600

- Controls and guides wire at high speed rates for today's modern wire processing systems
- Keeps your wire clean
- Fits standard 24" diameter barrels

Subject to additional shipping charges.



Type	Gauge	Stock No.	Colors Available	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 1000'	Typical Stranding	Nominal O.D. in. (mm)
SXL Standard wall	18	WX18	0 thru 9, 11, 12, 15, 16	500, 1000, 2500, 5000†	10	16/30	0.107 (2.74)
	16	WX16	0 thru 9, 11, 12, 15, 16	500, 1000, 2000, 5000††	14	19/29	0.119 (3.07)
	14	WX14	0 thru 9, 11, 12, 15	500, 1000, 1500, 5000††	20	19/27	0.138 (3.58)
	12	WX12	0 thru 6, 9	250, 500, 1000, 2500††	29	19/25	0.161 (4.17)
	10	WX10	0, 1, 2, 4, 5, 6, 9	250, 500, 750, 2000††	43	19/23	0.191 (4.95)
	8	WX8	0, 2	250, 500, 2500††	66	19/21	0.232 (5.89)
GXL Thin wall	20	WL20	0 thru 9, 11, 12, 16	500, 1000, 3000, 5000†	7	7/28	0.085 (2.16)
	18	WL18	0 thru 9, 11, 12, 15, 16	500, 1000, 3000, 5000†	9	19/30	0.094 (2.39)
	16	WL16	0 thru 9, 11, 12, 15, 16	500, 1000, 2500, 5000††	12	19/29	0.103 (2.62)
	14	WL14	0 thru 9, 11, 12, 15, 16	500, 1000, 2000, 4000††	18	19/27	0.117 (2.97)
	12	WL12	0 thru 9, 11, 12, 15, 16	250, 500, 1000, 1500, 3000††	27	19/25	0.142 (3.61)
	10	WL10	0 thru 6, 8, 9	250, 500, 1000, 2000††	41	19/23	0.176 (4.47)
TXL Extra thin wall	8	WL8	0, 2, 3, 5, 6, 8, 9	250, 500, 1500††	64	19/21	0.217 (5.51)
	22	WM22	0 thru 9, 11, 12, 15, 16	500, 1000, 3000, 15000††	4	7/30	0.062 (1.57)
	20	WM20	0 thru 9, 11, 12, 15, 16	500, 1000, 3000, 7500††	6	7/28	0.070 (1.77)
	18	WM18	0 thru 9, 11, 12, 15, 16	500, 1000, 3000, 6000†	7	19/30	0.078 (1.98)
	16	WM16	0 thru 9, 11, 12, 15, 16	500, 1000, 2500, 5000†	10	19/29	0.088 (2.24)
	14	WM14	0 thru 9, 11, 12, 15, 16	500, 1000, 2000, 5000††	14	19/27	0.103 (2.62)
	12	WM12	0, 2, 4 thru 9, 16	250, 500, 1000, 3000††	22	19/25	0.128 (3.23)
10	WM10	0, 2	250, 500, 1000, 2500††	37	19/23	0.155 (3.94)	
8	WM8	0, 2	250, 500, 1000, 2500††	57	19/21	0.181 (4.85)	

NOTES

- † These spools are subject to additional shipping charges.
- †† These spools ship via truck.

ORDER BY STOCK NO. AND COLOR

WX18 - 0
 |
 Type Color
 Final ordering stock number: WX18-0
 Specify footage needed and put-up requirements.

COLORS

0 - BLACK	1 - BROWN	2 - RED	3 - ORANGE
4 - YELLOW	5 - GREEN	6 - BLUE	7 - VIOLET
8 - GRAY	9 - WHITE	11 - TAN	12 - PINK
15 - LT. GREEN	16 - LT. BLUE		



AUTOMOTIVE PRIMARY WIRE

- Single conductor, stranded, bare copper
- Jacketed polyvinylchloride (PVC)
- Excellent resistance to oil and flame
- Custom printing or striping available

176°F (80°C)
 -40°F (-40°C)



Application

- Standard for automotive applications, most widely used general purpose wire in the industry
- Smooth surface ideal for pulling through loom or conduit
- Standard for original equipment and replacement automotive applications



Drum quantities upon request. Call 800-328-2724 for details.



Type	Gauge	Stock No.	Colors Available	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 1000'	Typical Stranding	Nominal O.D. in. (mm)
GPT Standard Wall	20	WG20	0 thru 9, 11, 12	500, 1000, 3000, 5000†	6	10/30	0.085 (2.13)
	18	WG18	0 thru 9, 11, 12, 15, 16	500, 1000, 3000, 5000†	8	16/30	0.095 (2.41)
	16	WG16	0 thru 9, 11, 12, 15, 16	500, 1000, 2500, 5000†	11	19/29	0.102 (2.59)
	14	WG14	0 thru 9, 11, 12, 15, 16	500, 1000, 2000, 4000††	16	19/27	0.117 (2.97)
	12	WG12	0 thru 9	500, 1000, 1500, 3000††	25	19/25	0.142 (3.61)
	10	WG10	0, 2 thru 7, 9	500, 1000, 2000††	39	19/23	0.174 (4.45)
	8	WG8	0, 2, 5, 9	500, 1500††	62	19/21	0.217 (5.51)

NOTES

- † These spools are subject to additional shipping charges.
- †† These spools ship via truck.

ORDER BY STOCK NO. AND COLOR

WG20 - 0
 Type Color
 Final ordering stock number: **WG20-0**.
 Specify footage needed and put-up requirements.

COLORS

0 - BLACK	1 - BROWN	2 - RED	3 - ORANGE
4 - YELLOW	5 - GREEN	6 - BLUE	7 - VIOLET
8 - GRAY	9 - WHITE	11 - TAN	12 - PINK
15 - LT. GREEN	16 - LT. BLUE		

Automotive GPT Primary Wire 100' Put-Ups



60V

Gauge	Stock No.	Colors Available	Approx. Weight, Lbs. Per 1000'	Typical Stranding	Nominal O.D. in. (mm)
18	WG18	0 thru 9, 11, 12, 15, 16	8	16/30	0.095 (2.41)
16	WG16	0 thru 9, 11, 12, 15, 16	11	19/29	0.102 (2.59)
14	WG14	0 thru 9, 11, 12, 15, 16	16	19/27	0.117 (2.97)
12	WG12	0 thru 9, 12	25	19/25	0.142 (3.61)
10	WG10	0 thru 9, 12	39	19/23	0.175 (4.45)
8	WG8	0, 2, 5, 9	62	19/21	0.217 (5.51)

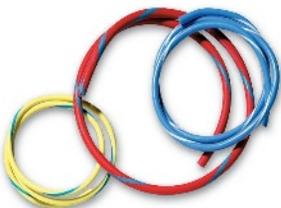
ORDER BY STOCK NO., COLOR AND PUT-UP

WG18 - 0 - 100
 Type Color Put-Up
 Final ordering stock number: **WG18-0-100**.

COLORS

SEE CHART ABOVE

CUSTOM WIRE STRIPING



- 22-10 ga in both GPT or cross-linked polyethylene jacketed constructions
- Up to 3 stripes per wire
- 1,000 ft. minimum requirement



Call 800-328-2724 for details.

CUSTOM PRINTING



- 20-10 ga wire
- Available in English only
- Black print
- 1,000 ft. minimum requirement



Call 800-328-2724 for details.



SGR BATTERY CABLE

- Highly flexible EPDM jacket
- Used for interconnection between batteries and starter or ground in vehicles
- Multi-stranded bare copper conductor cable
- Meets SAE J1127, UL 558 and UL 583



60V

Gauge	Stock No.	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 100'	Typical Stranding	Nominal O.D. in. (mm)
6	SGR6	100, 250, 500††	13	260/30	0.318 (8.08)
4	SGR4	100, 250, 500††	17	364/30	0.358 (9.09)
2	SGR2	100, 250††	25	624/30	0.422 (10.72)
1	SGR1	100, 250††	35	767/30	0.503 (12.78)
1/0	SGR0	100, 250††	40	975/30	0.538 (13.67)
2/0	SGR00	100, 250††	46	1,196/30	0.591 (15.01)
3/0	SGR000	100††	65	1,547/30	0.630 (16.00)
4/0	SGR0000	100††	79	1,950/30	0.718 (18.24)



COLORS

0 - BLACK 2 - RED

NOTES

†† These spools ship via truck. Footage of the largest put-up for each item may vary.

ORDER BY STOCK NO., COLOR AND PUT-UP

SGR6 - 0 - 100

Type Color Put-Up

Final ordering stock number: SGR6-0-100
Specify footage needed and put-up requirements.

SGT BATTERY CABLE

- Tough, high temperature resistant PVC insulation
- Multi-stranded bare copper conductor cable
- Resistant to oil, most acids, grease and abrasion



60V

Gauge	Stock No.	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 100'	Typical Stranding	Nominal O.D. in. (mm)
6	WB6	100, 250, 500††	13	49/22.5	0.330 (8.38)
4	WB4	100, 250, 500††	18	70/22.5	0.380 (9.65)
2	WB2	100, 250††, 500††	28	133/23	0.450 (11.43)
1	WB1	100, 250††, 500††	31	133/22	0.490 (12.45)
1/0	WB0	100, 250††, 500††	46	133/21	0.550 (13.97)
2/0	WB00*	100, 250††, 500††	51	133/20	0.605 (15.37)
3/0	WB000	100††, 200††	66	259/22	0.695 (17.65)
4/0	WB0000	50††, 100††	87	19x108/30	0.706 (17.93)



*176°F (80°C)

COLORS

0 - BLACK 2 - RED

NOTES

†† These spools ship via truck. Footage of the largest put-up for each item may vary.

ORDER BY STOCK NO. AND COLOR

WB6 - 0

Type Color

Final ordering stock number: WB6-0
Specify footage needed and put-up requirements.

SGX BATTERY CABLE

- Cross-link polyethylene
- Multi-stranded bare copper conductor cable
- Resistant to oil, most acids, grease and abrasion



60V

Gauge	Stock No.	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 100'	Typical Stranding	Nominal O.D. in. (mm)
6	WZ6	100, 250, 500††	12	133/27	0.316 (8.03)
4	WZ4	100, 250, 500††	18	133/25	0.395 (10.03)
2	WZ2	100, 250††, 500††	27	133/23	0.450 (11.43)
1	WZ1	100, 250††, 500††	32	127/22	0.491 (12.47)
1/0	WZ0	100, 250††, 500††	40	1064/30	0.531 (13.49)
2/0	WZ00	100, 250††, 500††	48	1330/30	0.577 (14.66)
3/0	WZ000	100, 200††	66	1672/30	0.780 (19.76)



COLORS

0 - BLACK 2 - RED

NOTES

†† These spools ship via truck. Footage of the largest put-up for each item may vary.

ORDER BY STOCK NO. AND COLOR

WZ6 - 0

Type Color

Final ordering stock number: WZ6-0
Specify footage needed and put-up requirements.



PARALLEL BATTERY CABLE

- Also called duplex battery cable
- Stranded, bare copper
- Available in PVC or Thermoplastic Elastomer (TPE) insulation
- Flexible stranding for cold and warm weather use
- Insulation color is black with red stripe



221°F (105°C)
 -50°F (-46°C)
 60V

Application

- Flexible duplex battery cable can be used for a variety of applications such as electric tarps, lift gates, spreaders, and any application requiring power to a remote area
- Ideal for booster cable construction

Gauge	Stock No.	Insulation	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 100'	Typical Stranding	Nominal O.D. in. (mm)
8	WF8-2	TPE	100, 500††	19	30/23	.320 X .700 (.81 X 1.57)
6	WF6-2	TPE	100, 500††	23	259/30	.320 X .650 (.81 X 1.65)
6	WFV6-2*	PVC	100, 500††	21	259/30	.320 X .650 (.81 X 1.65)
4	WF4-2	TPE	100, 500††	36	133/25	.400 X .815 (1.02 X 2.07)
2	WFR2-2	TPE	100††, 500††	58	665/30	.521 X 1.14 (1.32 X 2.90)

NOTES
 †† These spools ship via truck. Footage of the largest put-up for each item may vary. *176°F (80°C)

WELDING CABLE

- Stranded, bare copper
- Class K welding cable
- Flexible stranding
- Dual jacket
- Water resistant Thermoplastic Elastomer (TPE) insulation inner jacket
- Neoprene outer jacket

221°F (105°C)
 -55°F (-48°C)
 600V

Additional colors and gauge sizes may be available on special order basis. Call 800-328-2724 for details.

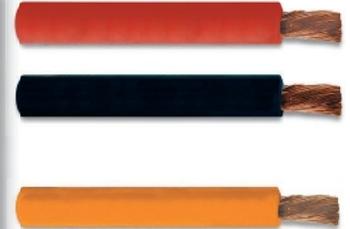
Gauge	Stock No.	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 100'	Typical Stranding	Nominal O.D. in. (mm)
6	WC6*	100, 250, 500††	14	266/30	0.390 (9.91)
4	WC4*	100, 250, 500††	20	420/30	0.440 (11.18)
2	WC2	100, 250††	29	665/30	0.510 (12.95)
1	WC1	100, 250††	36	833/30	0.540 (13.72)
1/0	WC0	100, 250††	40	1045/30	0.610 (15.49)
2/0	WC00	100, 250††	55	1330/30	0.660 (16.76)
3/0	WC000	100††	72	1691/30	0.730 (18.54)
4/0	WC0000	100††	84	2109/30	0.790 (20.07)

COLORS
 0 - ● BLACK 2 - ● RED 3 - ● *ORANGE

NOTES **ORDER BY STOCK NO., COLOR AND PUT-UP**

†† These spools ship via truck. Footage of the largest put-up for each item may vary.

WC6 - 0 - 100
 | | |
 Type Color Put-Up
Final ordering stock number: WC6-0-100
 Specify footage needed and put-up requirements.



* Orange jacket is standard in electric vehicles for high voltage identification. Available in 6 and 4 gauge, 100 ft put-ups

EPDM WELDING CABLE

- Highly flexible annealed 30 (0.010) gauge bare copper conductor, insulated with an EPDM jacket and paper separator
- Durable jacket resists cuts, tears, abrasion, grease, oil, water and flame

221°F (105°C)
 -58°F (-50°C)
 600V



Gauge	Stock No.	Standard Put-Up - Ft.	Approx. Weight, Lbs. Per 100'	Typical Stranding	Nominal O.D. in. (mm)
6	WCE6	100, 250, 500††	12	259/010	0.320 (8.128)
4	WCE4	100, 250, 500††	15	364/010	0.348 (8.839)
2	WCE2	100, 250††	24	624/010	0.420 (10.668)
1	WCE1	100, 250††	32	780/010	0.503 (12.776)
1/0	WCE0	100, 250††	38	988/010	0.533 (13.538)
2/0	WCE00	100, 250††	47	1235/010	0.586 (14.884)
3/0	WCE000	100††	57	1539/010	0.625 (15.875)
4/0	WCE0000	100††	74	2014/010	0.720 (18.288)

COLORS
 0 - ● BLACK 2 - ● RED

NOTES **ORDER BY STOCK NO., COLOR AND PUT-UP**

†† These spools ship via truck. Footage of the largest put-up for each item may vary.

WCE6 - 0 - 100
 | | |
 Type Color Put-Up
Final ordering stock number: WCE6-0-100
 Specify footage needed and put-up requirements.





TRAILER CABLE

- Stranded, bare copper
- Black jacketed PVC
- Resistant to oil, gas, moisture and acids



176°F (80°C)
-67°F (-55°C)



4 to 7 conductors



Stock No. WTW14-6



Stock No. WT702 RV Trailer Cable



Call 800-328-2724 for special construction configurations.

Gauge/ Conductors	Stock No.	Conductor Colors	Standard Put-Up - Ft.	Approx. Weight, Lbs Per 100'	Typical Stranding	Nominal O.D. in (mm)
18/7	WT18-7	red, brown, yellow, green, blue, black, white	100, 250, 500†	9	16/30	0.340 (8.64)
16/4	WT16-4	red, brown, yellow, green	100, 250, 500†	9	19/29	0.360 (9.14)
16/4	WTW16-4	black, red, brown, white	100, 250, 500†	9	19/29	0.360 (9.14)
16/6	WT16-6	red, brown, yellow, green, blue, black	100, 250, 500††	14	19/29	0.420 (10.67)
16/6	WTW16-6	red, green, brown, white, black, yellow	100, 250, 500††	14	19/29	0.421 (10.67)
14/4	WT14-4	red, brown, yellow, green	100, 250, 500††	12	19/27	0.400 (10.16)
14/4	WTW14-4	white, brown, yellow, green	100, 250, 500††	12	19/27	0.400 (10.16)
14/4	WTB14-4	black, red, brown, white	100, 250, 500††	12	19/27	0.400 (10.16)
14/6	WT14-6	red, brown, yellow, green, blue, black	100, 250, 500††	18	19/27	0.493 (12.52)
14/6	WTW14-6	red, green, brown, white, black, yellow	100, 250, 500††	18	19/27	0.493 (12.52)
14/7	WT14-7	red, white, black, brown, yellow, green, blue	100, 250, 500††	20	19/27	0.496 (12.60)
12/4	WT12-4	red, white, black, brown	100, 250, 500††	16	19/25	0.453 (11.51)
12/6	WT12-6	red, white, black, brown, yellow, green	100, 250, 500††	25	19/25	0.560 (14.22)
12/6 & 10/1	WT701	12 Ga - red, brown, yellow, blue, black, green 10 Ga - white	100, 250, 500††	31	19/25 19/23	0.600 (15.24)
14/4 & 12/1 & 10/2	WT702	14 Ga - red, brown, yellow, green 12 Ga - blue 10 Ga - black, white	100, 250, 500††	27	19/27 19/25 19/23	0.560 (14.73)

NOTES

- † These spools are subject to additional shipping charges.
- †† These spools ship via truck.

ABS TRAILER CABLE

- General purpose trailer cable used for ABS systems
- Standard green jacketed PVC
- Resistant to oil, gas, moisture and acids
- Stranded bare copper



176°F (80°C)
-58°F (-50°C)



Stock No. WT703

Gauge/ Conductors	Stock No.	Standard Put-Up - Ft.	Approx. Weight, Lbs Per 100'	Typical Stranding	Nominal O.D. in. (mm)	Conductor Colors
12/4 & 10/2 & 8/1	WT703	100, 1000††	42	19/27 19/23 19/21	0.690 (17.27)	12 ga - brown, yellow, green, black 10 ga - blue, red 8 ga - white

NOTES

- †† These spools ship via truck.

PARALLEL BONDED CABLE

- Stranded, bare copper
- Available in 2, 3, and 4 conductor construction
- Individual wires can be split apart



176°F (80°C)
-22°F (-30°C)



2, 3 or 4 conductor

Application

- Extensively used for wiring trailer lights and many other applications where an economically priced multiple wire configuration is needed

Gauge/ Conductors	Stock No.	Typical Stranding	Approx. Weight Lbs. Per 1000'	Standard Put-Up - Ft.	Conductor Colors
18/2	WP18-2	16/30	19	250, 500, 4000††	red, brown
18/2	WPR18-2	16/30	19	250, 500, 4000††	red, black
18/3	WP18-3	16/30	33	250, 500, 1000	brown, yellow, green
18/4	WP18-4	16/30	55	250, 500, 1000	white, brown, yellow, green
16/2	WP16-2	19/29	27	250, 500, 3000††	red, brown
16/2	WPR16-2	19/29	27	250, 500, 3000††	red, black
16/3	WP16-3	19/29	41	250, 500, 2000††	brown, yellow, green
16/4	WP16-4	19/29	63	250, 500, 1000	white, brown, yellow, green
14/2	WP14-2	19/27	34	250, 500, 3000††	red, brown
14/2	WPR14-2	19/27	34	250, 500, 3000††	red, black
14/3	WP14-3	19/27	48	250, 500, 2000††	brown, yellow, green
14/4	WP14-4	19/27	73	250, 500, 1000	white, brown, yellow, green

NOTES

- †† These spools ship via truck.

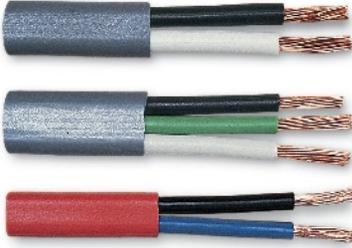




BRAKE CABLE



Call 800-328-2724 for special construction configurations.



2, 3 or 4 conductor

- Stranded, bare copper
- Flat, jacketed PVC
- Resistant to oil, grease, gasoline and most acids
- Available with 2, 3, and 4 conductors
- Color coded
- Gray jacket unless noted

Application

- Automotive, truck or trailer applications

Gauge/ Conductors	Stock No.	Conductor Colors	Standard Put-Up - Ft.	Approx. Weight Lbs. Per 1000'	Typical Stranding	Nominal O.D. in. (mm)
18/2	WD18-2	white, black	250, 500, 2000††	33	16/30	.160 x .255 (4.06 x 6.48)
16/2	WD16-2	white, black	250, 500, 1500††	36	19/29	.168 x .275 (4.27 x 6.99)
16/2	WDRB16-2	red, black	250, 500, 1500††	36	19/29	.168 x .275 (4.27 x 6.99)
16/2	WDB16-2**	white, black	250, 500, 1500††	36	19/29	.168 x .275 (4.27 x 6.99)
16/3	WD16-3	white, black, green	250, 500, 1000††	66	19/29	.168 x .380 (4.27 x 9.65)
16/4	WD16-4	white, black, green, red	250, 500, 1000††	77	19/29	.168 x .485 (4.27 x 12.32)
14/2	WD14-2	white, black	250, 500, 1000††	54	19/27	.185 x .310 (4.70 x 7.87)
14/2	WDRB14-2	red, black	250, 500, 1000††	54	19/27	.185 x .310 (4.70 x 7.87)
14/3	WD14-3	white, black, green	250, 500††	75	19/27	.185 x .425 (4.70 x 10.80)
14/4	WD14-4	white, black, green, red	250, 500††	92	19/27	.185 x .545 (4.70 x 13.84)
12/2	WD12-2	white, black	250, 500, 1000††	71	19/25	.210 x .360 (5.33 x 9.14)
12/2	WDR12-2*	blue, black	250, 500, 1000††	71	19/25	.210 x .360 (5.33 x 9.14)
12/3	WD12-3	white, black, green	250, 500, 1000††	99	19/25	.210 x .500 (5.33 x 12.70)
10/2	WD10-2	white, black	250, 500, 1000††	113	19/23	.246 x .432 (6.25 x 10.97)
10/4	WD10-4	white, black, green, red	100, 250, 500††	185	19/23	.246 x .776 (6.25 x 19.71)
8/2	WD8-2	white, black	100, 250, 500††	180	19/21	.297 x .530 (7.54 x 13.46)

NOTES

†† These spools ship via truck. Footage of the largest put-up for each item may vary.

* Red Jacket
** Black Jacket

CAN-BUS CABLE



Shielded constructions are FLEX-RAY compatible @10 MHz and have been tested to meet 100 MHz and meets SAE J1939 requirements for CAN-Bus cables. The CAN-Bus cables are designed with materials that meet or exceed TXL requirements and the impedance, return loss and attenuation requirements of the network system. The shielding reduces the harmful effect of EMI or RFI interference. The combination of controlled impedance and shielding can reduce or eliminate data transfer issues.

- TWISTIR technology helps maintain twist integrity and electrical performance
- Offers high-speed network communication
- Jacket Material: Exrad 125
- Color: Black
- RoHS Compliant



60V



Stock No. CB23-00033



Stock No. CB23-00070

Waytek Stock No.	Gauge	Description	Conductors	Nom. Jacket Finished O.D. inches (mm)	SAE Specs
CB23-00033	20	Shielded	2	0.300 (7.62)	J1939-11
CB23-00065	18	Shielded	2	0.352 (8.95)	J1939-11
CB23-00074	20	Unshielded	2	0.208 (5.28)	J1939-15
CB23-00070	18	Unshielded	2	0.211 (5.36)	J1939-15



MULTI-CONDUCTOR SHIELDED CABLE

- Stranded tinned copper drain wire with aluminum mylar overall shield
- Polyethylene insulation
- UL Type CM
- NEC Article 800
- Excellent EMI/RFI protection



Gauge/Conductor	Stock No.	Conductor Colors	Standard Put-Ups – Ft.	Approx. Weight Lbs. Per 1000'	Typical Stranding	Nominal O.D. in. (mm)	Nominal Gray PVC Jacket Thickness	AWM Style
22/2	ST22-2	black, natural	500, 1000	17	7/25	0.172 (4.37)	0.030"	2092
22/3	ST22-3	black, red, natural	500, 1000	24	7/29	0.198 (5.02)	0.026"	2093
22/7	ST22-7*	black, red, white, green, brown, blue, orange	500, 1000	36	7/30	0.211 (5.36)	0.026"	2576
18/2	ST18-2	black, natural	500, 1000	29	16/23	0.229 (5.82)	0.030"	2092
18/3	ST18-3	black, red, natural	500, 1000	39	16/25	0.232 (5.89)	0.026"	2093

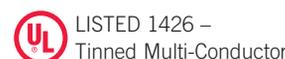
Application

- Processing equipment & audio

* Unshielded

MULTI-CONDUCTOR MARINE CABLE

- White jacketed PVC
- Tinned copper conductors
- Meets DOT and Coast Guard specifications



3 conductors

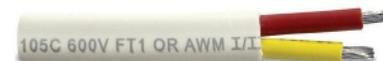
Gauge/Conductors	Stock No.	Typical Stranding	Nominal O.D. (mm)	Approx. Weight Lbs. Per 1000'	Standard Put-Up – Ft.	Conductor Colors
16/3	MC16-3	19/0117	.430 x .190 (10.92 x 4.83)	72	250, 500, 1000††	black, green, white
14/3	MC14-3	19/0147	.470 x .200 (11.94 x 5.08)	82	250, 500, 1000††	black, green, white
12/3	MC12-3	19/0185	.530 x .220 (13.46 x 5.59)	104	250, 500††, 1000††	black, green, white
10/3	MC10-3	19/0234	.600 x .240 (15.24 x 6.10)	149	250, 500††, 1000††	black, green, white



3 conductors

2 conductors

Gauge/Conductors	Stock No.	Typical Stranding	Nominal O.D. (mm)	Approx. Weight Lbs. Per 1000'	Standard Put-Up – Ft.	Conductor Colors
16/2	MC16-2	19/01117	.310 x .190 (7.87 x 4.83)	40	250, 500, 1000††	black, white
16/2	MCY16-2	19/01117	.310 x .190 (7.87 x 4.83)	40	250, 500, 1000††	red, yellow
16/2	MCB16-2	19/01117	.310 x .190 (7.87 x 4.83)	40	250, 500, 1000††	red, black
14/2	MC14-2	19/0147	.340 x .200 (8.64 x 5.08)	59	250, 500, 1000††	black, white
14/2	MCY14-2	19/0147	.340 x .200 (8.64 x 5.08)	59	250, 500, 1000††	red, yellow
14/2	MCB14-2	19/0147	.340 x .200 (8.64 x 5.08)	59	250, 500, 1000††	red, black
12/2	MC12-2	19/0185	.380 x .220 (9.65 x 5.59)	77	250, 500, 1000††	black, white
12/2	MCY12-2	19/0185	.380 x .220 (9.65 x 5.59)	77	250, 500, 1000††	red, yellow
12/2	MCB12-2	19/0185	.380 x .220 (9.65 x 5.59)	77	250, 500, 1000††	red, black
10/2	MC10-2	19/0234	.420 x .240 (10.67 x 6.10)	115	250, 500††, 1000††	black, white
10/2	MCY10-2	19/0234	.420 x .240 (10.67 x 6.10)	115	250, 500††, 1000††	red, yellow
10/2	MCB10-2	19/0234	.420 x .240 (10.67 x 6.10)	115	250, 500††, 1000††	red, black



2 conductors

†† These spools ship via truck.

SPEAKER CABLE



Clear jacketed PVC



Gray jacketed PVC

- Conductors are marked for polarity

Application

- General audio applications

Type	Gauge/Conductors	Stock No.	Standard Put-Ups – Ft.	Typical Stranding	Nominal O.D. in. (mm)
Clear Jacket Polarity Marked Conductors	22/2	SC22-2	250, 1000	7/30	.070 x .142 (1.78 x 3.61)
	18/2	SC18-2	250, 1000	16/30	.092 x .190 (2.34 x 4.83)
	16/2	SC16-2	250, 1000	19/29	.104 x .212 (2.64 x 5.38)
	14/2	SC14-2	250, 1000	19/27	.107 x .224 (2.72 x 5.69)
Gray Jacket Polarity Marked	22/2	SCG22-2	250, 1000	7/30	.070 x .142 (1.78 x 3.61)



SERVICE CORD



Type SJ00W



Type S00W

- Stranded, bare copper
- Excellent resistance to abrasion, ozone, sunlight, chemicals and oils
- Inside jacket material: Chlorinated Polyethylene (CPE)
- Approved for submersion in water
- Outer jacket printed with cable identification, wire gauge and number of conductors
- MSHA approved
- UL/CSA Horizontal Flame Test
- Available in 250 ft. put-ups
- Bulk spools available on special order



Call 800-328-2724 for special construction configurations.

Type	Gauge/Conductors	Stock No.	Conductor Colors	Approx. Weight, Lbs. Per 250' Spool	Current Amps	Typical Stranding	Nominal O.D. in. (mm)
SJ00W 300 Volts Oil Resistant Heavy-Duty	18/2	SJ18-2	black, white	11	10	16/30	0.280 (7.11)
	18/3	SJ18-3	black, white, green	13	10	16/30	0.300 (7.62)
	16/2	SJ16-2	black, white	13	13	26/30	0.310 (7.87)
	16/3	SJ16-3	black, white, green	17	13	26/30	0.333 (8.46)
	16/4	SJ16-4	black, white, green, red	21	10	26/30	0.360 (9.14)
Outside Insulation Material: Ethylene Propylene (EP)	14/2	SJ14-2	black, white	17	18	41/30	0.300 (8.64)
	14/3	SJ14-3	black, white, green	23	18	41/30	0.360 (9.14)
	14/4	SJ14-4	black, white, green, red	28	15	41/30	0.400 (10.16)
	12/3	SJ12-3	black, white, green	33	25	65/30	0.430 (10.92)
	12/4	SJ12-4	black, white, green, red	41	20	65/30	0.470 (11.94)
S00W 600 Volts Oil Resistant Heavy-Duty	18/3	SO18-3	black, white, green	19	10	16/30	0.360 (9.14)
	18/4	SO18-4	black, white, green, red	22	7	16/30	0.390 (9.91)
	16/3	SO16-3	black, white, green	23	13	26/30	0.390 (9.91)
	16/4	SO16-4	black, white, green, red	27	10	26/30	0.420 (10.67)
	16/5	SO16-5	black, white, green, red, orange	42	8	26/30	0.500 (12.70)
Outside Insulation Material: Ethylene Propylene Diene M-class (EPDM)	14/3	SO14-3	black, white, green	41	18	41/30	0.520 (13.21)
	14/4	SO14-4	black, white, green, red	48	15	41/30	0.570 (14.48)
	14/5	SO14-5	black, white, green, red, orange	69	12	41/30	0.645 (16.38)
	12/3	SO12-3	black, white, green	55	25	65/30	0.590 (14.99)
	12/4	SO12-4	black, white, green, red	66	20	65/30	0.640 (16.26)
10/3	SO10-3	black, white, green	71	30	105/30	0.650 (16.51)	

BLADE CONNECTING DEVICES



Straight Blade Device (2-Pole 3-Wire Grounding)



Connector Stock No.	Plug Stock No.	Amps	Volts	Pin Config.	NEMA Config.	Color	Grade	Diameter Range
11035	11034	15	125		5-15	Yellow	Commercial	.245-.655
11037	11036	15	125		5-15	Black-White	Industrial	.245-.700
11041	11040	20	125		5-20	Black-White	Industrial	.245-.700

SJ00W and S00W type service cord can be used with these items.

Standard Straight Blade Device

- Conductor wire gauge range of 18 thru 10 with solid brass terminal screw
- Fits cord diameters of .300" to .655"
- Dust resistant inlet with a nylon housing both front and back



Connector Stock No.	Plug Stock No.	Amps	Volts	Pin Config.	NEMA Config.	Dust Resistant Inlet Stock No.
10340	10341	15	125		5-15	10342



HOOK UP WIRE - UL TYPE

- Tinned copper is more resistant to corrosion and easier to solder compared to bare copper
- Meets flammability rating VWI
- Waytek is a UL Certified re-spooler of wire

Application

- Internal wiring of electrical equipment such as: panels, meters, and point-to-point wiring



Description	Gauge	Stock No.	Colors Available	Wall Thickness Mils. (mm)	Standard Put-Ups - Ft.	Approx. Weight, Lbs. Per 1000'	Typical Stranding	Nominal O.D. in. (mm)
Tinned Copper UL 1015/1230/MTW/AWM 221°F (105°C) 600V UL 1032 194°F (90°C) 1000V CSA TEW 221°F (105°C) 600V 30 Mils PVC	22	WRT22	0 thru 9	30 (0.76)	250, 500, 1000, 2500, 7500†	6	7/30	0.090 (2.29)
	20	WRT20	0 thru 9	30 (0.76)	250, 500, 1000, 2500, 5000†	7	10/30	0.098 (2.49)
	18	WRT18	0 thru 9	30 (0.76)	250, 500, 1000, 2500, 5000†	10	16/30	0.108 (2.74)
	16	WRT16	0 thru 9	30 (0.76)	250, 500, 1000, 2500, 5000†	13	26/30	0.124 (3.15)
	14	WRT14	0 thru 9	30 (0.76)	250, 500, 1000, 2500, 5000†	16	41/30	0.141 (3.58)
Bare Copper UL 1015/1230/MTW/AWM 221°F (105°C) 600V UL 1032 194°F (90°C) 1000V CSA TEW 221°F (105°C) 600V 30 Mils PVC	22	WR22	0 thru 4, 7, 8, 9	30 (0.76)	250, 500, 1000, 2500, 7500†	6	7/30	0.090 (2.29)
	20	WR20	1, 3 thru 7	30 (0.76)	250, 500, 1000, 2500, 5000†	7	10/30	0.098 (2.49)
	18	WR18	0 thru 9	30 (0.76)	250, 500, 1000, 2500, 5000†	10	16/30	0.108 (2.74)
	16	WR16	0 thru 9	30 (0.76)	250, 500, 1000, 2000, 5000††	13	26/30	0.122 (3.10)
	14	WR14	0 thru 9	30 (0.76)	250, 500, 1000, 1500, 5000††	19	41/30	0.135 (3.43)
	12	WR12	0 thru 6, 9	30 (0.76)	250, 500, 1000, 5000††	28	65/30	0.155 (3.94)
	10	WR10	0, 2, 4, 5, 6, 9	30 (0.76)	250, 500, 1000, 2500††	41	105/30	0.178 (4.52)
Tinned Copper UL 1007/1569 221°F (105°C) 300V CSA TR-64 194°F (90°C) 300V 15 Mils PVC	24	WQT24	0 thru 9	15 (0.38)	250, 500, 1000, 2500, 10000†	3	7/32	0.056 (1.42)
	22	WQT22	0 thru 9	15 (0.38)	250, 500, 1000, 2500, 10000†	4	7/30	0.062 (1.57)
	20	WQT20	0 thru 9	15 (0.38)	250, 500, 1000, 2500, 10000†	5	10/30	0.069 (1.75)
	18	WQT18	0 thru 9	15 (0.38)	250, 500, 1000, 2500, 5000††	7	16/30	0.079 (2.01)
Bare Copper TFFN UL 1408/1316 221°F (105°C) 600V UL 1452 194°F (90°C) 1000V TEWN 221°F (105°C) 600V Gasoline & oil resistant 4 Mils Nylon jacket over 15 Mils PVC	18	WN18★	0 thru 9	19 (0.48)**	500, 1000, 5000†	8	16/30	0.090 (2.29)
	16	WN16★	0 thru 6, 9	19 (0.48)**	500, 1000, 5000†	12	26/30	0.100 (2.54)
Bare Copper UL THHN/THWN/MTW/1316 221°F (105°C) 600V UL 1452 194°F (90°C) 1000V ▲ CSA TWN 75/T90 600V Gasoline & oil resistant **4 mils Nylon jacket over 15 mils PVC *4 mils Nylon jacket over 20 mils PVC	14 ▲	WN14★	0 thru 9	19 (0.48)**	500, 1000, 5000†	17	19/27	0.112 (2.84)
	12 ▲	WN12★	0 thru 5, 9	19 (0.48)**	500, 1000, 5000†	25	19/25	0.132 (3.35)
	10	WN10★	0, 2, 5	24 (0.61)*	500, 1000, 2500†	40	19/23	0.163 (4.14)

NOTES

- † These spools are subject to additional shipping charges.
- †† These spools ship via truck.
- ★ Cannot stripe or print

ORDER BY STOCK NO. AND COLOR

WRT22 - 0
 Type Color
 Final ordering stock number: WRT22-0
 Specify footage needed and put-up requirements.

COLORS

0 - BLACK	1 - BROWN	2 - RED
3 - ORANGE	4 - YELLOW	5 - GREEN
6 - BLUE	7 - VIOLET	8 - GRAY
9 - WHITE		

TERMINALS

Non-Insulated

Rings	20
Spades	21
Hook & Stars	21
Quick Disconnects	21
Bullet	21
Parallel	21
High Temperature	22
Butt	22

Insulated

Rings	23
Butt	23
Spades	24
Bullet	24

Parallel	25
Pin	25
Multi-Studs	25
Hook & Stars	25
Flag	25
Quick Disconnects	26

Heat Shrink

Rings	27
Spades	27
Quick Disconnects	27
Perma-Seal	28
Butt	29
Crystal Clear	30
Multiple Wire	30

Splice	31
Closed End	32
Spring	32
Crimpable Battery Lugs	33
Eyelets	34-35
Lugs	36
Bolt Extenders	36
Battery Boots	36
Battery Clips	37
Booster Cables	37



3M

molex

RINGS



Butted Seam

UL and CSA information may be available upon request.

Butted Seam

Serrated terminal barrel for extra wire grip. Chamfered for easy wire insertion. Tin plated copper material.



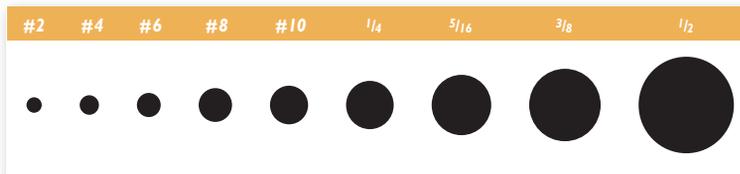
Brazed Seam

Brazed Seam

This terminal is similar to the butted seam terminal, except the seam in the barrel has been brazed. The brazing allows the terminal to be crimped in any position around the barrel, which helps give extra wire holding strength. Tin plated copper material.

Stud Hole Chart for Ring Terminals

Stud holes are shown actual size. Use this chart to determine which terminal to order.



Dielectric Grease

Stock No. 29050

- Prevents corrosion and keeps moisture out of sensitive electrical connections



Size	Stud Size	Butted Seam		Brazed Seam		Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.	
22-18 Ga	4	30000	19044-0064	30200	19056-0008	Chart A pg. 20
	6+	30001	19044-0084	30201	19056-0037	
	6	30007	19044-0068	30207	19056-0013	
	8+	30002	19044-0086	30202	19056-0039	
	8	30008	19044-0069	30208	19056-0015	
	10	30003	19044-0072	30203	19056-0018	
	1/4	30004	19044-0075	30204	19056-0023	
	5/16	30005	19044-0077	30205	19056-0025	
3/8	30006	19044-0081	30206	19056-0013		
16-14 Ga	4	31000	19044-0150	31200	19056-0063	
	6+	31001	19044-0152	31201	19056-0065	
	6	31008	19044-0030	31208	19056-0104	
	8+	31009	19044-0154	31209	19056-0068	
	8	31002	19044-0031	31202	19056-0106	
	10	31003	19044-0326	31203	*	
	1/4	31004	19044-0158	31204	*	
	5/16	31005	19044-0160	31205	19056-0075	
3/8	31006	19044-0146	31206	19056-0057		
1/2	----	----	31207	*		
12-10 Ga	6+	32000	19069-0230	32200	19193-0128	
	6	32007	19069-0202	32207	19069-0202	
	8+	32001	19069-0233	32201	19193-0130	
	8	32008	19069-0205	32208	19193-0106	
	10	32002	19069-0209	32202	19193-0109	
	1/4	32003	19069-0219	32203	19193-0116	
	5/16	32004	19069-0223	32204	19193-0120	
	3/8	32005	19069-0241	32205	19193-0137	
1/2	32006	19069-0192	32206	19193-0094		
8 Ga	8	----	----	33000	19193-0200	
	10	----	----	33001	19193-0202	
	1/4	----	----	33002	19193-0152	
	5/16	----	----	33003	19193-0171	
	3/8	----	----	33004	19193-0167	
	1/2	----	----	33005	19193-0176	
6 Ga	10	----	----	34000	19193-0245	
	1/4	----	----	34001	19193-0248	
	5/16	----	----	34002	19193-0219	
	3/8	----	----	34003	19193-0216	
	1/2	----	----	34004	19193-0226	
4 Ga	10	----	----	35005	19193-0254	
	1/4	----	----	35000	19193-0261	
	5/16	----	----	35001	19193-0267	
	3/8	----	----	35002	19193-0264	
	1/2	----	----	35003	19193-0281	
2 Ga	1/4	----	----	35020	19193-0305	
	5/16	----	----	35021	19193-0309	
	3/8	----	----	35022	19193-0307	
	1/2	----	----	35023	19163-0296	

+ These terminals are offered in a narrow width to be used where space is minimal.
* Sourced by an alternate supplier

RECOMMENDED CRIMP TOOLS

**Non-Insulated 22-10 ga Crimpers
Tool Chart A**

Stock No.	Features
Ratcheting	
434	Ratcheting
458	Heavy-Duty Wire, Bolt Cutter and Wire Stripper
535	Heavy-Duty Crimper
Economical	
403	Wire Stripper
456	Wire Cutter
457	Heavy-Duty Wire Cutter
466	All in one Crimper-Cutter-Stripper
522	Works well in small spaces
569	Master Tool Kit



**Insulated 22-10 ga Crimpers
Tool Chart B**

Stock No.	Features
Ratcheting	
405	Heavy-Duty Ratcheting
434	Ratcheting
458	Heavy-Duty Wire Bolt Cutters and Wire Stripper
513	MIL-Spec & Ratchet
584	Thomas & Betts Ratchet
Economical	
403	Wire Stripper
457	Heavy-Duty Wire Cutters
466	All in one Crimper-Cutter-Stripper
491	Crimper
522	Works well in small spaces
569	Master Tool Kit

For details on the tools, go to page 66-71.

Please note that we cannot guarantee that a given tool will perform a satisfactory crimp on a specific terminal due to variables that include terminal material, terminal wall thickness, wire gauge, wire stranding and wire insulation thickness. The user must make the final determination that a crimp is acceptable.

SPADES

- Tin plated copper material



Standard Spade

Flanged Block Spade

Wire Ga	Stud Size	Standard Spade		Flanged Block Spade		Tool Guide
		Butted Seam Stock No.	Molex No.	Butted Seam Stock No.	Molex No.	
22-18	8	----	----	30021	19117-0018	Chart A pg. 20
22-18	10	30025	19140-0037	----	----	
16-14	8	31024	19140-0091	31021	19117-0084	
16-14	10	31025	19140-0195	31022	19117-0052	
12-10	6	32023	19141-0081	----	----	
12-10	8	32024	19141-0083	32021	19118-0086	
12-10	10	32025	19141-0085	32022	19118-0088	



Block Spade

Snap Spade

Wire Ga	Stud Size	Block Spade		Snap Spade		Tool Guide
		Butted Seam Stock No.	Molex No.	Brazed Seam Stock No.	Molex No.	
16-14	6	31026	19128-0021	31253	*	Chart A pg. 20
16-14	8	31027	19128-0023	31254	*	
16-14	10	31028	19128-0055	31255	*	
12-10	6	32026	19129-0008	32253	*	
12-10	8	32027	19129-0007	32254	*	
12-10	10	32028	19129-0005	32255	*	

* Sourced by an alternate supplier

MALE AND FEMALE DISCONNECTS

Female Disconnects

- Tin plated brass material



Wire Ga	Tab Size Width & Thickness	Butted Seam		Tool Guide
		Stock No.	Molex No.	
22-18	.187 x .020	30016	19016-0005	#569 pg. 68
22-18	.250 x .032	30011	19019-0009	
16-14	.110 x .020	31019	19016-0035	#466 pg. 70
16-14	.187 x .020	31016	19019-0039	
16-14	.250 x .032	31011	19019-0111	
12-10	.250 x .032	32011	19016-0069	
12-10	.375 x .050	32012	*	

* Sourced by an alternate supplier
All dimensions in inches.

Male Disconnects

- Zinc plated brass material



Wire Ga	Tab Size Width & Thickness	Butted Seam		Tool Guide
		Stock No.	Molex No.	
22-18	.250 x .032	30010	19022-0004	Chart A pg. 20
16-14	.250 x .032	31010	19022-0119	
12-10	.250 x .032	32010	19022-0118	

All dimensions in inches.

BULLET CONNECTORS

Male Bullet Connector

- Tin plated copper material



Wire Ga	Size	Butted Seam		Tool Guide
		Stock No.	Molex No.	
22-18	.180	30067	19033-0001	Chart A pg. 20
16-14	.156	31061	19033-0007	
16-14	.180	31067	19033-0005	

All dimensions in inches.

HOOKS AND STAR RINGS

- Star rings feature a serrated opening and are generally used for grounding
- Star blades can pierce many paint surfaces for a better bite to insure a good connection
- Tin plated copper material



Hook

Star Ring

Wire Ga	Stud Size	Hook Butted Seam		Star Ring Butted Seam		Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.	
22-18	10	----	----	30088	19074-0007	Chart A pg. 20
16-14	6	31540	19171-0007	31086	19074-0015	
16-14	8	31041	19170-0009	31087	19074-0017	
16-14	10	31042	19170-0009	31088	19074-0019	
12-10	10	32042	19178-0018	----	----	

PARALLEL CONNECTORS

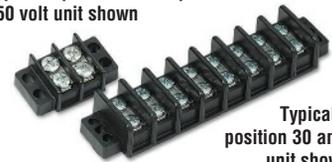
- Ideal for splicing wire together with only one crimp
- Tin plated copper material



Wire Ga	Butted Seam		Brazed Seam		Tool Guide
	Stock No.	Molex No.	Stock No.	Molex No.	
22-18	----	----	30270	19207-0001	Chart A pg. 20
16-14	31070	19208-0001	----	----	
12-10	32070	19208-0002	----	----	
8	----	----	33070	19205-0004	#535 pg. 70
6	----	----	34070	19205-0006	

See page 188 for Terminal Blocks.

Typical 2 position 30 amp/
150 volt unit shown



Typical 8
position 30 amp
unit shown

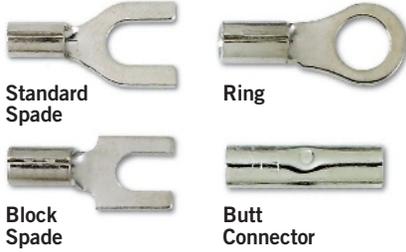
- Block spades and flanged block spades are popular for use with terminal blocks as they are the narrowest styles and fit most terminal blocks
- Snap spades will snap and hold in place for a more secure connection

Tool Guide Charts on page 20.



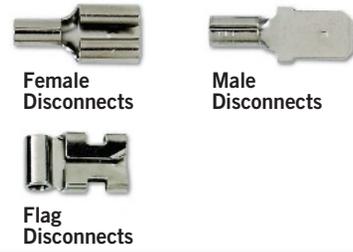
3M™ HIGH TEMPERATURE TERMINALS

- Nickel plated steel terminals for continuous duty to 900°F (482°C)
- Due to steel construction, heavy-duty ratchet crimpers are recommended



Type	Wire Ga	Stock No.	Tool Guide
Butt Connector	22-18	30460	Chart A pg. 20
	16-14	31460	
	12-10	32460	

Type	Wire Ga	Stud Size	Stock No.	Tool Guide		
Ring	22-18	4-6	30401	#434 pg. 70		
	22-18	10	30403			
	22-18	1/4	30404			
	16-14	4-6	31401			
	16-14	10	31403			
	16-14	1/4	31404			
	12-10	4-6	32400			
	12-10	10	32402			
	12-10	1/4	32403			
	12-10	3/8	32405			
	Spade	8	1/4		33402	#535 pg. 70
		6	3/8		34403	
4		3/8	35402			
Spade	22-18	10	30425	Chart A pg. 20		
	16-14	10	31425			
	12-10	10	32425			
Block Spade	22-18	4-6	----	Chart A pg. 20		
	16-14	4-6	31426			



Type	Wire Ga	Tab Width (in.)	Stock No.	Tool Guide
Female Disconnects	16-14	.187	31416	Chart A pg. 20
	16-14	.250	31411	
Male Disconnects	16-14	.187	31414	
	16-14	.250	31410	
Flag Disconnects	16-14	.250	31417	#404 or #428 pg. 70

MISCELLANEOUS DISCONNECTS

16-14 ga Flag

- Stock No. 31017
- Tab width .250 x .032
- See tools 404 on page 70 & 428 on page 70
- Tin plated brass material



Double Male-Female

- Stock No. 31051
- Tab width .250 x .032
- Brass material



Double Male-Female

- Stock No. 31052
- Tab width .250 x .032
- Brass material



Disconnect Adapter

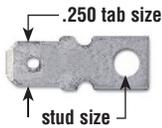
- Stock No. 31056
- 1 - .250 x .032 female tab to 2 - .250 x .032 male tabs
- Brass material



Male Tab

- Tin plated copper material

Stock No.	Stud Size	Tool Guide
37050	6	#535 pg. 70
37051	8	#535 pg. 70
37052	10	Chart A



STEP-DOWN BUTT CONNECTORS

- Used to connect two different sized wires, internal step down
- Window allows for a sound mechanical crimp
- Tin plated copper material

- Stripes at both ends indicate which wire size to insert and which crimp die to use, external step down
- Tin plated copper material
- Lead free



Wire Ga	Color	Stock No.	Molex No.	Tool Guide
22-18 to 16-14	Red stripe	38054	19215-0013	#569 & #563 pg. 68
16-14 to 12-10	Blue stripe	38055	19215-0023	#569 & #563 pg. 68
12-10 to 8	Yellow stripe	38056	19215-0037	#404 pg. 70

Wire Ga	Stripe Color	Stock No.	Tool Guide
24-22 to 20-18	White/Red	38245	----
20-18 to 16-14	Red/Blue	38246	#569 & #563 pg. 68
16-14 to 12-10	Blue/Yellow	38247	#569 & #563 pg. 68
12-10 to 8	Yellow/Pink	38248	#404 pg. 70

STANDARD BUTT CONNECTORS

- Tin plated copper material

Wire Ga	Butted Seam		Brazed Seamless		Tool Guide
	Stock No.	Molex No.	Stock No.	Molex No.	
22-18	30060	*	30260	19215-0009	#569 & #563 pg. 68
16-14	31060	*	31260	*	
12-10	32060	*	32260	19215-0028	
8	----	----	33060	*	#535 pg. 70
6	----	----	34060	19215-0040	
4	----	----	35060	19215-0045	
2	----	----	35061	19215-0046	
1/0	----	----	35063	19215-0047	#462 pg. 33
2/0	----	----	35064	19215-0048	
3/0	----	----	35065	19205-0012	
4/0	----	----	35066	19205-0013	



* Sourced by an alternate supplier

American Wire Gauge Conversion Chart

American Wire Ga (AWG)	Diameter (in.)	Diameter (mm)	Cross Sectional Area (mm ²)
4/0	0.4600	11.68	107.16
3/0	0.4096	10.40	84.97
2/0	0.3648	9.27	67.40
1/0	0.3249	8.25	53.46
1	0.2893	7.35	42.39
2	0.2576	6.54	33.61
3	0.2294	5.83	26.65
4	0.2043	5.19	21.14
5	0.1819	4.62	16.76
6	0.1620	4.11	13.29
7	0.1443	3.67	10.55

American Wire Ga (AWG)	Diameter (in.)	Diameter (mm)	Cross Sectional Area (mm ²)
8	0.1285	3.26	8.36
9	0.1144	2.91	6.63
10	0.1019	2.59	5.26
11	0.0907	2.30	4.17
12	0.0808	2.05	3.31
13	0.0720	1.83	2.63
14	0.0641	1.63	2.08
15	0.0571	1.45	1.65
16	0.0508	1.29	1.31
17	0.0453	1.15	1.04
18	0.0403	1.02	0.82

American Wire Ga (AWG)	Diameter (in.)	Diameter (mm)	Cross Sectional Area (mm ²)
19	0.0359	0.91	0.65
20	0.0320	0.81	0.52
21	0.0285	0.72	0.41
22	0.0254	0.65	0.33
23	0.0226	0.57	0.26
24	0.0201	0.51	0.20
25	0.0179	0.45	0.16
26	0.0159	0.40	0.13

Tool Guide Charts on page 20.



BUTT CONNECTORS

Standard

- Tin plated copper material



Wire Ga	Butted Vinyl Stock No.	Molex No.	Brazed Nylon Stock No.	Molex No.	Tool Guide
22-18	30560	*	30760	19202-0013	Chart B pg. 20
16-14	31560	*	31760	19202-0031	
12-10	32560	*	32760	19202-0049	
8	33560	*	33760	*	#535 pg. 70
6	34560	19154-0045	----	----	
4	35560	19154-0048	----	----	

* Sourced by an alternate supplier

3M™ Moisture Resistant

- Nylon insulated with an extra sleeve
- Filled with a silicone material to help keep moisture, dust and other contamination out of the connection
- Crimp on both the wire and insulation
- Tin plated copper material



Wire Ga	Insulation Color	Stock No.	Tool Guide
20-18	Red	30771	Chart B pg. 20
16-14	Blue	31771	
12-10	Yellow	32771	

3M™ Nylon with Extra Sleeve

- Use where an extra secure connection is required, but moisture protection isn't needed
- Double crimp on both the copper conductor and insulation
- Tin plated copper material



Wire Ga	Insulation Color	Stock No.	Tool Guide
22-18	Red	30780	Chart B pg. 20 and #405 pg. 70
16-14	Blue	31780	
12-10	Yellow	32780	

Internal Step Down

- Inside diameter adjusted for different wire gauge
- Use to connect two different sized wires
- Vinyl insulation
- Tin plated copper material



Wire Ga	Stripe Color	Insulation Color	Stock No.	Molex No.	Tool Guide
22-18 / 16-14	Red	Blue	38050	*	Chart B pg. 20
16-14 / 12-10	Blue	Yellow	38051	*	
12-10 / 8	Yellow	Red	38052	19154-0044	

* Sourced by an alternate supplier

External Step Down

- Both internal and external diameter adjusted for different wire gauge
- Stripes at both ends indicate which wire size to insert and which crimp die to use
- Vinyl insulation
- Tin plated copper material



Wire Ga	Stripe Color	Insulation Color	Stock No.	Tool Guide
26-24 / 22-18	White	Red	38260	Chart B pg. 20
20-18 / 16-14	Red	Blue	38261	
16-14 / 12-10	Blue	Yellow	38262	
12-10 / 8	Yellow	Pink	38263	

Window Butt Splice Nylon **molex**

- Nylon insulated with an extra support sleeve
- Inspection window for viewing correct wire insertion
- Crimp both the wire conductor and insulation for vibration resistance
- Tin plated copper material



Wire Ga	Insulation Color	Stock No.	Molex No.	Tool Guide
20-18	Red	30781	19199-0007	Chart B pg. 20
16-14	Blue	31781	19199-0009	
12-10	Yellow	32781	19199-0011	

INSULATED RINGS

UL and CSA information may be available upon request.

Vinyl Insulated

Vinyl insulated terminals consist of the standard butted seam non-insulated terminal with a color coded vinyl jacket molded into place. Most vinyl insulated terminals feature funnel entry for easy wire insertion. Tin plated copper material.



Typical Vinyl Insulated

Nylon Insulated with Extra Sleeve

Nylon insulated terminals start as a standard butted seam terminal with a brass sleeve over the barrel and the nylon insulation is molded over this brass barrel. These terminals should be crimped twice, once on the copper conductor in the wire and once on the insulation part of the wire. This second crimp helps provide a stronger connection, can act as a strain relief and is recommended when the terminal is subject to vibration. Tin plated copper material.



Typical Nylon Insulated

Size	Stud Size	Vinyl Insulated		Nylon w/Extra Sleeve		Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.	
22-18 Ga Red Ins	4	30500	19054-0032	30700	19057-0003	Chart B pg. 20 or #405 pg. 70
	6+	30501	19054-0052	30701	19057-0028	
	6	30507	19054-0035	30707	19057-0007	
	8+	30502	19054-0054	30702	19057-0030	
	8	30508	19054-0037	30708	19057-0009	
	10	30503	19054-0039	30703	19057-0011	
	1/4	30504	19054-0042	30704	19057-0015	
	5/16	30505	19054-0044	30705	19057-0017	
3/8	30506	19054-0048	30706	19057-0007		
16-14 Ga Blue Ins	4	31500	19054-0080	31700	19057-0052	
	6+	31501	19054-0081	31701	19057-0054	
	6	31508	19054-0108	31708	19057-0088	
	8+	31509	19070-0292	31709	19057-0056	
	8	31502	19070-0086	31702	19057-0090	
	10	31503	19054-0019	31703	19057-0102	
	1/4	31504	19054-0086	31704	19057-0060	
	5/16	31505	19054-0001	31705	19057-0062	
3/8	31506	19054-0075	31706	19057-0046		
1/2	31507	*	31707	*		
12-10 Ga Yellow Ins	6+	32500	19070-0143	32700	19073-0130	
	6	32507	19070-0019	32707	19073-0108	
	8+	32501	19070-0145	32701	19073-0132	
	8	32508	19070-0121	32708	19073-0110	
	10	32502	19070-0123	32702	19073-0113	
	1/4	32503	19070-0132	32703	19073-0119	
	5/16	32504	19070-0155	32704	19073-0123	
	3/8	32505	19070-0153	32705	19073-0139	
1/2	32506	*	32706	19073-0101		

+ These terminals are offered in a narrow width to be used where space is minimal.
* Sourced by an alternate supplier

Size	Stud Size	Nylon Insulated Only		Tool Guide
		Stock No.	Molex No.	
8 Ga Red Ins	8	33500	19067-0003	#535 pg. 70
	10	33501	19067-0006	
	1/4	33502	19067-0008	
	5/16	33503	19067-0025	
	3/8	33504	19067-0022	
1/2	33505	19067-0028		
6 Ga Blue Ins	10	34500	19067-0069	
	1/4	34501	19067-0071	
	5/16	34502	19067-0055	
	3/8	34503	19067-0052	
1/2	34504	19067-0061		
4 Ga Yellow Ins	10	35505	19067-0081	
	1/4	35500	19067-0082	
	5/16	35501	19067-0084	
	3/8	35502	19067-0078	
	1/2	35503	19067-0085	
2 Ga Red Ins.	1/4	35520	19067-0096	
	5/16	35521	19067-0098	
	3/8	35522	19067-0097	
1/2	35523	19067-0090		

Insulation Color Chart

Insulated	Terminal Colors
26-24 ga	Yellow
22-18 ga	Red
16-14 ga	Blue
12-10 ga	Yellow
8 ga	Red
6 ga	Blue
4 ga	Yellow
2 ga	Red

Tool Guide Charts on page 20 .



SPADES | molex

- Tin plated copper material

Block Spade



Snap Spade

- Snaps and holds in place for a more secure connection



Standard Spade



Flanged Block Spade



Wire Ga	Stud Size	Block Spade				Snap Spade		Tool Guide
		Vinyl		Nylon w/Extra Sleeve		Vinyl	Nylon	
		Stock No.	Molex No.	Stock No.	Molex No.	Stock No.	Stock No.	
22-18	6	30526	19130-0005	30110	19137-0005	30553*	30753*	Chart B pg. 20
22-18	8	30527	19130-0006	30111	19137-0006	30554*	30754*	
22-18	10	30528	19130-0007	30112	19137-0007	30555*	30755*	
16-14	6	31526	19130-0044	31125	19137-0022	31553*	31753*	
16-14	8	31527	19130-0045	31126	19137-0023	31554*	31754*	
16-14	10	31528	19130-0046	31127	19137-0024	31555*	31755*	
12-10	6	32526	19131-0006	32100	19137-0038	32553*	32753*	
12-10	8	32527	19131-0004	32101	19137-0040	32554*	32754*	
12-10	10	32528	19131-0002	32102	19137-0041	32555*	32755*	

* Sourced by an alternate supplier

Wire Ga	Stud Size	Standard Spade				Flanged Block Spade				Tool Guide
		Vinyl		Nylon w/Extra Sleeve		Vinyl		Nylon		
		Stock No.	Molex No.	Stock No.	Molex No.	Stock No.	Molex No.	Stock No.	Molex No.	
22-18	6	30523	19142-0003	30113	19196-0005	30520	19119-0004	30720	19125-0003	Chart B pg. 20
22-18	8	30524	19142-0005	30114	19196-0007	30521	19119-0007	30721	19125-0005	
22-18	10	30525	19142-0007	30115	19196-0009	30522	19119-0010	30722	19125-0007	
16-14	6	31523	19142-0029	31128	19146-0037	31520	19119-0080	31720	19125-0033	
16-14	8	31524	19142-0030	31129	19196-0039	31521	19119-0029	31721	19125-0035	
16-14	10	31525	19142-0032	31130	19196-0041	31522	19119-0032	31722	19125-0037	
12-10	6	32523	19144-0037	32103	19196-0075	----	----	32720	19125-0074	
12-10	8	32524	19144-0039	32104	19196-0077	32521	19121-0053	32721	19125-0076	
12-10	10	32525	19144-0042	32105	19196-0068	32522	19121-0056	32722	19125-0078	

BULLET CONNECTORS |

Male Bullet



Female Bullet



Male Bullet Connector

- Tin plated copper material

Wire Ga	Size	Vinyl		Nylon		Nylon w/Extra Sleeve		Insulation Color	Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.	Stock No.	Molex No.		
22-18	.156	30561	19034-0005	----	----	30761	19035-0003	Red	Chart B pg. 20 and #404 pg. 70
22-18	.180	30567	19034-0002	----	----	30767	19035-0001	Red	
16-14	.156	31561	19034-0009	31761	*	31763	19035-0009	Blue	
16-14	.180	31567	19034-0007	----	----	31767	19035-0005	Blue	
12-10	.195	30564	*	----	----	----	----	Yellow	

* Sourced by an alternate supplier

All dimensions in inches.

Female Bullet Connector

- Brass material

Wire Ga	Size	Vinyl		Nylon		Nylon w/Extra Sleeve		Insulation Color	Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.	Stock No.	Molex No.		
22-18	.156	----	----	30568	19038-0037	30768	19039-0002	Red	Chart B pg. 20
22-18	.180	----	----	30566	19038-0006	30766	19039-0005	Red	
16-14	.156	----	----	31568	19038-0009	31768	19039-0007	Blue	
16-14	.180	----	----	31566	19038-0013	31766	19039-0010	Blue	
12-10	.195	30565	*	----	----	----	----	Yellow	

* Sourced by an alternate supplier

All dimensions in inches.

3M™ HIGHLAND™ TERMINAL KIT |

180 Assorted Pieces

Stock No. 22222

Includes a selection of the most popular vinyl insulated ring, fork, butt splice and disconnect terminals

See www.waytekwire.com for contents



BULLET CONNECTOR KIT |

190 Assorted Pieces

Stock No. 38514

Selection of high quality bullet connectors that can be connected and disconnected repeatedly. Designed to SAE specifications.

See www.waytekwire.com for contents



Tool Guide Charts on page 20.



PARALLEL CONNECTORS |

- Convenient way to splice wire together with only one crimp
- Tin plated copper material

molex

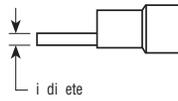


Wire Ga	Stock No.	Vinyl Molex No.	Insulation Color	Tool Guide
22-18	30570	19206-0002	Red	Chart B pg. 20
16-14	31570	19206-0005	Blue	
12-10	32570	19206-0010	Yellow	
8	33570	19206-0012	Red	#535 pg. 70
6	34570	19206-0013	Blue	

PIN TERMINALS |

3M

- Used to connect wires to terminal strips on pg. 188 and trailer connectors on pg. 62-63
- Tin plated copper material

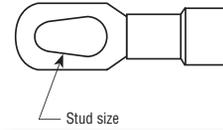


Wire Ga	Pin Dia.	Vinyl Stock No.	Nylon Stock No.	Tool Guide
22-18	0.08	30585	30785	Chart B pg. 20
16-14	0.08	31585	31785	
12-10	0.11	32585	32785	

MULTI-STUDS |

3M

- Securely connects to a variety of stud sizes with oblong stud hole and washered face
- Tin plated copper material



Wire Ga	Stud Size	Vinyl Stock No.	Nylon Stock No.	Tool Guide
22-18	2-4-6	----	30757	Chart B pg. 20
22-18	6-8-10	30558	30758	
16-14	2-4-6	----	31757	
16-14	6-8-10	31558	31758	Chart B pg. 20
12-10	6-8-10	32558	32758	

HOOKS AND STAR RINGS |

- Tin plated copper material

molex

Hook



Star



Wire Ga	Stud Size	Hooks				Star Rings				Tool Guide
		Stock No.	Vinyl Molex No.	Stock No.	Nylon Molex No.	Stock No.	Vinyl Molex No.	Stock No.	Nylon Molex No.	
22-18	6	----	----	----	----	----	----	30786	19076-0001	Chart B pg. 20
22-18	8	30541	*	----	----	----	----	----	----	
22-18	10	----	----	----	----	----	----	30788	19076-0005	
16-14	6	31540	19171-0007	----	----	31586	19075-0013	31786	19076-0013	
16-14	8	31541	19171-0009	----	----	31587	19075-0015	31787	19076-0015	
16-14	10	31542	19171-0012	31742	19174-0011	31588	19075-0017	31788	19076-0017	
12-10	6	32540	19179-0014	----	----	----	----	----	----	
12-10	10	32542	19179-0019	32742	19184-0005	----	----	----	----	

* Sourced by an alternate supplier

CONNECTORS |

molex

Nylon Insulated Female Flag

- Tin plated brass material



16-14 ga Insulated Male-Female .250" Connector

Stock No. 31517 Vinyl Insulated

Stock No. 31717 Nylon Insulated with sleeve

- See crimper Stock No. 428 on page 75
- Tin plated copper material



Double Male Clear Insulated .250" Connector

Stock No. 38021

(Molex No. 19163-0178)

- Tin plated copper material



VINYL TERMINAL KIT – SOLDERLESS CONNECTORS |

175 Assorted Pieces

Stock No. 22250

- 18 different ring terminals, butt connectors, male/ female disconnects, and spade terminals



See www.waytekwire.com for contents

280 Assorted Pieces

Stock No. 22258

- 24 different terminals, butt connectors, male/ female disconnects, and spade terminals



240 Assorted Pieces

Stock No. 22259

- 12 different terminals, butt connectors, male/ female disconnects, and spade terminals
- All in one crimp tool included



Tool Guide Charts on page 20.



3M™ SCOTCHLOK™ MALE & FEMALE DISCONNECTS - NYLON INSULATED

- Female - Tin plated brass material
- Male - Tin plated copper material



Wire Ga	Tab Size Width & Thickness	Male - Nylon		Female - Nylon		Insulation Color	Tool Guide
		Stock No.	with Extra Sleeve Stock No.	Stock No.	with Extra Sleeve Stock No.		
22-18	.187 x .020	30550	30750	30518	30718	Red	#405 pg. 70 or #496
22-18	.250 x .032	30512	30712	30513	30713	Red	
16-14	.187 x .020	31550	31750	31518	31718	Blue	
16-14	.250 x .032	31512	31712	31513	31713	Blue	
12-10	.250 x .032	32514	32714	32515	32715	Yellow	

All dimensions in inches.

MALE & FEMALE DISCONNECTS | molex

- Male - Zinc plated brass material
- Female - Tin plated brass material

Molex Male & Female Disconnects - Vinyl or Nylon Insulated

Wire Ga	Tab Size Width & Thickness	Male Vinyl Insulated		Male Nylon Insulated		Female Vinyl Insulated		Female Nylon Insulated		Insulation Color	Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.	Stock No.	Molex No.	Stock No.	Molex No.		
22-18	.110 x .020	----	----	----	----	----	----	30715	19019-0001	Red	#496
22-18	.187 x .020	30551	19023-0003	30751	19025-0002	30516	19017-0007	30716	19019-0006	Red	
22-18	.187 x .032	----	----	----	----	31714	19019-0008	----	----	Red	
22-18	.250 x .032	30510	19023-0005	30710	19025-0001	30511	19017-0014	30711	19019-0012	Red	
16-14	.110 x .020	----	----	----	----	31519	19017-0023	31719	19019-0022	Blue	
16-14	.187 x .032	----	----	----	----	----	----	31715	19019-0028	Blue	
16-14	.187 x .020	31551	19023-0010	31751	19025-0008	31516	19017-0031	31716	19019-0027	Blue	
16-14	.250 x .032	31510	19023-0012	31710	19025-0007	31511	19017-0037	31711	19019-0031	Blue	
12-10	.250 x .032	32510	*	32710	19025-0005	32511	19017-0047	32711	19019-0037	Yellow	
12-10	.375 x .050	----	----	----	----	32512	*	----	----	Yellow	

* Sourced by an alternate supplier

All dimensions in inches.



Molex Male & Female Disconnects - Nylon Fully Insulated

Wire Ga	Tab Size Width & Thickness	Male Nylon with Extra Sleeve	Molex No.	Female Nylon with Extra Sleeve	Molex No.	Insulation Color
22-18	.250 x .032	30714	19001-0001	30717	19002-0001	Red
22-18	.187 x .020	30752	19001-0003	30729	19002-0005	Red
22-18	.187 x .032	----	----	30749	19003-0017	Red
16-14	.250 x .032	30756	19001-0006	30743	19002-0024	Blue
16-14	.187 x .020	30762	19001-0008	30745	19002-0028	Blue
12-10	.250 x .032	30764	19001-0010	30747	19606-0005	Yellow

All dimensions in inches.



Hand Tool Stock No. 496

- Crimps 22-10 ga insulated push-on connectors
- Full cycling ensures complete crimps
- Crimp release for operator safety



NYLON INSULATED QUICK DISCONNECT KIT | molex

125 Assorted Pieces
Stock No. 38511

Color coded insulator allows easy identification of terminal size and wire gauge. Fulfills the double crimp support requirements of VDE and other DIN specifications.

See www.waytekwire.com for contents



DELUXE NYLON INSULATED QUICK DISCONNECT KIT | molex

601 Assorted Pieces
Stock No. 38512

Includes:
Molex universal crimp tool-bolt cutter/wire stripper/wire cutter, for 22-10 ga terminals

See www.waytekwire.com for contents



HEAT SHRINK TERMINALS

3M™ Heat Shrink Ring

- Crimp and seal
- Tin plated copper material



Stud Size	22- 18 Ga Stock No.	16-14 Ga Stock No.	12-10 Ga Stock No.	Tool Guide
6	30907*	31908*	32907	Chart B pg. 20 and Heat Guns pg. 79
8	30908*	31902*	32908*	
10	30903*	31903*	32902*	
1/4	30904	31904*	32903*	
5/16	30905	31905*	32904	
3/8	30906	31906*	32905*	
1/2	----	----	32906	

* 3M™ Scotchlok™

Crimp, Solder & Seal

- Crimped for reliability, soldered for strength and conductivity, sealed for protection
- Tin plated copper material
- Lead free



NEW

Stud Size	20- 18 Ga Stock No.	16-14 Ga Stock No.	12-10 Ga Stock No.	Tool Guide
10	30943	31943	32943	Chart B pg. 20 and Heat Guns pg. 79
1/4	30944	31944	32944	
5/16	30945	31945	32945	
3/8	30946	31946	32946	

3M™ Heat Shrink Snap Spade

- Crimp and seal
- Tin plated copper material



Stud Size	22- 18 Ga Stock No.	16-14 Ga Stock No.	12-10 Ga Stock No.	Tool Guide
6	30923*	31923*	32923	Chart B pg. 20 and Heat Guns pg. 79
8	30924*	31924*	32924*	
10	30925*	31925*	32925*	
1/4	----	----	32929*	

* 3M™ Scotchlok™

3M™ Scotchlok™ Heat Shrink Fully Insulated .250" Disconnects

- Provides extra protection against short circuits
- Used as connectors when mated



Male

- Tin plated copper

Male

Wire Ga	Insulation Color	Stock No.	Tool Guide
22-18	Red	30912	Chart B pg. 20 and Heat Guns pg. 79
16-14	Blue	31912	
12-10	Yellow	32914	



Female

- Tin plated brass

Female

Wire Ga	Insulation Color	Stock No.	Tool Guide
22-18	Red	30913	Chart B pg. 20 and Heat Guns pg. 79
16-14	Blue	31913	
12-10	Yellow	32915	

Heat Shrink .250" Disconnects



Male

- Tin plated copper

Male

Wire Ga	Insulation Color	Stock No.	Tool Guide
22-18	Red	30918	Chart B pg. 20 and Heat Guns pg. 79
16-14	Blue	31918	
12-10	Yellow	32918	



Female

- Tin plated brass

Female

Wire Ga	Insulation Color	Stock No.	Tool Guide
22-18	Red	30919	Chart B pg. 20 and Heat Guns pg. 79
16-14	Blue	31919	
12-10	Yellow	32919	

3M™ SCOTCHLOK™ HEAT SHRINK TERMINAL KIT

120 Assorted Pieces

Stock No. 22221

Selection of premier line of terminals, connectors and disconnects offering moisture protection, corrosion resistance and durability

See www.waytekwire.com for contents



CRIMP & SEAL CONNECTOR TERMINAL KIT

115 Assorted Pieces

Stock No. 22268

- Conforms to automotive manufacturers' specifications for wiring repairs, necessary for maintaining electrical warranties
- Variety of ring terminals, butt connectors, male/female disconnects, and spade terminals

See www.waytekwire.com for contents



Tool Guide Charts on page 20.



PERMA-SEAL HEAT SHRINK TERMINALS & CONNECTORS

- Provides a rugged, environmentally sealed connection
- Waterproof adhesive seal, insulates, seals and protects connections from water, salt, corrosion, heat, physical abuse and abrasion
- NiAc insulation material shrinks to 40% faster and at lower heat than competitive products
- Tin plated copper material

Perma-Seal Ring Terminals

Wire Ga	Stud Size	Stock No.	Molex No.	Tool Guide
22-18	6	30800	19164-0085	#479 or #480 pg. 71
22-18	8	30801	19164-0086	
22-18	10	30802	19164-0003	
22-18	1/4	30803	19164-0004	
22-18	3/8	30804	19164-0005	
16-14	6	31800	19164-0032	
16-14	8	31801	19164-0033	
16-14	10	31802	19164-0034	
16-14	1/4	31803	19164-0026	
16-14	5/16	31804	19164-0027	
16-14	3/8	31805	19164-0020	
12-10	6	32800	19164-0061	
12-10	8	32801	19164-0062	
12-10	10	32802	19164-0065	
12-10	1/4	32803	19164-0066	
12-10	5/16	32804	19164-0067	
12-10	3/8	32805	19164-0068	
12-10	1/2	32806	19164-0058	
8	10	32807	19164-0080	
8	1/4	32808	19164-0081	
8	5/16	32809	19164-0083	
8	3/8	32810	19164-0082	
8	1/2	32811	19164-0457	

Stock No. 31803



Stock No. 32803



Stock No. 32809

Perma-Seal Spades

Wire Ga	Stud Size	Stock No.	Molex No.	Tool Guide
22-18	6	32815	19164-0006	#479 or #480 pg. 71
22-18	8	32816	19164-0007	
22-18	10	32817	19164-0008	
16-14	6	32818	19164-0028	
16-14	8	32819	19164-0029	
16-14	10	32820	19164-0030	
12-10	6	32821	19164-0069	
12-10	8	32822	19164-0070	

Stock No. 32820

PERMA-SEAL TERMINAL KIT WITH CRIMP TOOL

95 Assorted Pieces
Stock No. 38510

- Inner seal repels moisture incursion, even during pressure cycling
- Meets industrial and military requirements for highly reliable, general purpose tubing

See www.waytekwire.com for contents



Perma-Seal Female Quick Disconnects



Stock No. 30920

Stock No. 31820

Stock No. 32920

Wire Ga.	Stock No.	Molex No.	Tool Guide
22-18	30920	19164-0012	#479 or #480 pg. 71
16-14	31820	19164-0047	
12-10	32920	19164-0059	

Perma-Seal Fully Insulated Disconnects

- Female - Tin plated brass material
- Male - Zinc plated brass material



Stock No. 30982

Stock No. 30981

Wire Ga	Tab Size	Female		Male		Color	Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.		
22-18	.250 x .032	30982	19164-0017	30981	19164-0015	Red	#479 or #480 pg. 71
16-14	.250 x .032	31773	19164-0050	31772	19164-0048	Blue	#479 or #480 pg. 71
12-10	.250 x .032	30986	19164-0076	30985	19164-0075	Yellow	#479 or #480 pg. 71

All dimensions in inches.

Perma-Seal Bullet Connectors



Stock No. 31915

Stock No. 31916

Wire Ga	Size	Female		Male		Tool Guide
		Stock No.	Molex No.	Stock No.	Molex No.	
22-18	.156	30915	19164-0052	30914	19164-0010	#479 or #480 pg. 71
22-18	.180	30917	19164-0053	30916	19164-0009	
16-14	.156	31915	19164-0054	31916	19164-0040	
16-14	.180	31921	19164-0039	31920	19164-0055	

All dimensions in inches.

Perma-Seal Butt Connectors



Stock No. 30980

Stock No. 38059

Wire Ga	Insulation Color	Stock No.	Molex No.	Tool Guide
22-18	Red	30980	19164-0013	#479 or #480 pg. 71
16-14	Blue	31980	19164-0044	
12-10	Yellow	32980	19164-0056	
8	Red	33980	19164-0079	
Step Down Butt Connectors				
22-18 to 16-14	Blue shrink/Red stripe	38058	19164-0043	#479 or #480 pg. 71
16-14 to 12-10	Yellow shrink/Blue stripe	38059	19164-0077	

SOLDER SPLICE CONNECTORS

- Solder butt and a heat shrink insulator sleeve provides a sealed connection
- Tin plated copper material
- No crimp



Wire Ga	Adhesive Color	Stock No.	Tool Guide
24-22	Clear	32897	Heat Guns pg. 79
20-18	Red	32898	
16-14	Blue	32899	
12-10	Yellow	32900	

STEP DOWN HEAT SHRINK BUTT CONNECTORS

Crimp, Solder & Seal NEW

- Crimped for reliability, soldered for strength and conductivity, and sealed for superior durability and protection
- Tin plated copper material
- Lead free



Wire Ga	Stripe Color	Insulation Color	Stock No.	Tool Guide
24-22 to 20-18	White/Red	Red	38235	Chart B pg. 20 and Heat Guns pg. 79
20-18 to 16-14	Red/Blue	Blue	38236	
16-14 to 12-10	Blue/Yellow	Yellow	38237	
12-10 to 8	Yellow/Pink	Pink	38238	#506 pg. 70 #480 pg. 71 and Heat Guns pg. 79

Crimp & Seal

- Crimped for reliability and sealed for protection
- Adhesive-lined polyolefin tubing with window for visual inspection
- Tin plated copper material



Wire Ga	Stripe Color	Insulation Color	Stock No.	Tool Guide
24-22 to 20-18	White/Red	Red	38250	Chart B pg. 20 and Heat Guns pg. 79
20-18 to 16-14	Red/Blue	Blue	38251	
16-14 to 12-10	Blue/Yellow	Yellow	38252	
12-10 to 8	Yellow/Pink	Pink	38253	#506 pg. 70 #480 pg. 71 and Heat Guns pg. 79

HEAT SHRINK COVERED BUTT CONNECTORS

Heat Shrink Tubing Over Seamless Non-Insulated Butt Connector

- Polyolefin heat shrink tubing and an adhesive melt liner
- Tin plated copper material



Wire Ga	Insulation Color	Stock No.	Tool Guide
24-22	Green	30770	Chart B pg. 20 and Heat Guns pg. 79
20-18	Red	30965	
16-14	Blue	31965	
12-10	Yellow	32965	

Heat Shrink Tubing Over Nylon Insulated Butt Connector

- Polyolefin heat shrink tubing and an adhesive melt liner
- Tin plated copper material



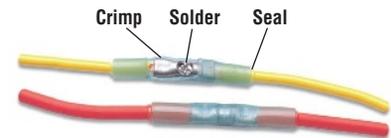
Wire Ga	Insulation Color	Stock No.	Tool Guide
20-18	Red	30960	Chart B pg. 20 and Heat Guns pg. 79
16-14	Blue	31960	
12-10	Yellow	32960	

MULTILINK CONNECTORS NEW

- Crimped for maximum reliability, soldered for strength and conductivity, and sealed for superior durability and protection
- Pre-fluxed, low temperature solder delivers superior current flow and tensile strength
- Translucent, adhesive-lined heat shrink tubing allows for visual inspection and seals against corrosion
- Lead free



Wire Ga	Insulation Color	Stock No.	Tool Guide
20-18	Red	30971	Chart B pg. 20 and Heat Guns pg. 79
16-14	Blue	31971	
12-10	Yellow	32971	



Typical Application

CRIMP & SEAL BUTT CONNECTOR KIT

60 Assorted Pieces
Stock No. 22267

- Conforms to automotive manufacturers' specifications for wiring repairs, necessary for maintaining electrical warranties

See www.waytekwire.com for contents



CRIMP, SOLDER & SEAL BUTT CONNECTOR KIT

60 Assorted Pieces
Stock No. 22272

- Heat shrink butt connector kit
- Pre-measured solder provides the right amount of solder to ensure a solid termination
- Low-temp solder alloy for ease of installation

See www.waytekwire.com for contents



Tool Guide Charts on page 20.



CRYSTAL CLEAR CONNECTORS

- 45 degree barrel assures that wire is seated properly and is being crimped to terminal
- 45 degree barrel angle allows tubing to adhere to wire and provides stronger seal
- Long ring terminal provides flush surface for maximum contact and allows ring terminal to be stacked

- Color coded stripes identify wire gauge size to be used with connector
- Color coded stripes also indicate/guide where to position crimp nest to install properly
- Brazed seam barrel ensures superior crimp performance
- Serrations in crimp barrel provide strong mechanical termination

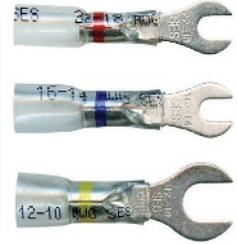
Ring Terminals

Stock No.	Wire Ga.	Stud Size	Stripe Color
30909	22-18	6	Red
30910	22-18	8	Red
30911	22-18	10	Red
31927	16-14	6	Blue
31928	16-14	8	Blue
31929	16-14	10	Blue
31930	16-14	1/4	Blue
31931	16-14	3/8	Blue
31932	16-14	5/16	Blue
32930	12-10	8	Yellow
32931	12-10	10	Yellow
32933	12-10	1/4	Yellow
32934	12-10	3/8	Yellow
32935	12-10	5/16	Yellow



Spade Connectors

Stock No.	Wire Ga.	Stud Size	Stripe Color
30935	20-18	6	Red
30936	20-18	10	Red
31933	16-14	6	Blue
31934	16-14	10	Blue
32937	12-10	10	Yellow
32938	12-10	1/4	Yellow



Step Down Butt Connectors

Stock No.	Gauge	Stripe Color
38240	24-22 to 20-18	Green/Red
38241	22-18 to 14-12	Red/Blue
38242	16-14 to 12-10	Blue/Yellow
38243	12-10 to 8	Yellow/Red



Quick Disconnects

Wire Ga.	Tab Size	Female Stock No.	Male Stock No.	Stripe Color
22-18	.250 x .032	30937	30938	Red
16-14	.250 x .032	31917	31914	Blue
12-10	.250 x .032	32916	32917	Yellow

All dimensions in inches.



1.5" CLEAR HEAT SHRINK BUTT CONNECTORS

- Crystal clear for visual inspection
- Color coded window
- Tin plated copper material



Wire Ga	Adhesive Color	Stripes on Connector	Stock No.	Tool Guide
22-18	Clear	Red	30784	Chart B pg. 20 and Heat Guns pg. 79
16-14	Clear	Blue	30783	
12-10	Clear	Yellow	30782	

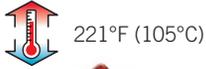
SEALED MULTIPLE WIRE CONNECTORS

- Join two wires to one wire
- Adhesive-lined heat shrink tubing between wires
- Color dash indicates wire gauge

Wire Ga	Insulation Color	Stock No.	Tool Guide
(1) 24-22 (2) 24-22	Clear/White Dashes	30190	Chart B pg. 20 and Heat Guns pg. 79
(1) 20-18 (2) 20-18	Clear/Red Dashes	30990	
(1) 16-14 (2) 16-14	Clear/Blue Dashes	31990	
(1) 12-10 (2) 12-10	Clear/Yellow Dashes	32990	



3M™ SCOTCHLOK™ T-TAP NYLON INSULATED SELF-STRIPPING FEMALE QUICKSLIDE DISCONNECT



T-Tap				Mating Connector*	
Stock No.	3M No.	Wire Range	Color	Nylon Ins. Stock No.	Nylon with Extra Sleeve Stock No.
30572	951K	22-18	Red	30512	30712
31572	952K	18-14	Blue	31512	31712
32572	953K	12	Yellow	32514	32714

* The mating connector must be ordered separately.

3M™ SCOTCHLOK™ IDC CONNECTORS FOR ELECTRICAL APPLICATIONS

- Used for quick connections with no wire stripping



Stock No.	3M No.	Wire Range	Color
30563	558	22-18	Red
30562	905	22-18 to 18-14	Red
31562	801	18-14	Blue
31574	564	18-14	White
31573	902	18-14 to 12-10	Brown
32562	903	12-10	Yellow

3M™ SCOTCHLOK™ 804 ELECTRICAL IDC, RUN AND TAP, MOISTURE RESISTANT

- Moisture Resistant Applications



Stock No.	3M No.	Wire Range	Color
31762	804	18-14	Blue

3M™ SCOTCHLOK™ INSULATED DISPLACEMENT CONNECTOR



Stock No.	3M No.	Special Features	Wire Range	Color	Operating Temperature
37044	UR	Moisture resistant seal	26-19	Red	285°F (140°C)
37045	UY	Moisture resistant seal	26-22	Yellow	285°F (140°C)
37040	314U	Dry environment applications	22-14	White	221°F (105°C)
37041	314	Moisture resistant seal	22-14	Blue	221°F (105°C)

INSTANT TAP CONNECTORS | Economically Priced



Stock No.	Type	Wire Range	Color
31575	With stop	22-18	Red
31576	With stop	18-14	Blue
31577	No stop	18-14	White

3M™ SCOTCHLOK™ HAND CRIMPING TOOL

Stock No. 429

- Spring-action
- Insulated handles
- Side wire cutter included
- Stepped jaws and long nose provide parallel crimping



CLOSED END CONNECTORS

- Connects wires easily
- Nylon insulation
- Tin-plated copper seamless crimp sleeve
- Can be used with stranded or solid wire

Typical Wire Range* (Two Solid Wires)	Typical Wire Range (Two Stranded Wires)	Stock No.
22-16	22-20	37024
16-14	18-16	37021
12-10	16-14	37020
8	12-10	37025

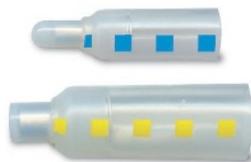
* Gauge listed on connector for solid wire.



HEAT SHRINKABLE CLOSED END CONNECTORS

- Heat shrinkable tubing has an active adhesive that seals between multiple wires and eliminates wire pull-out
- Can replace spring connectors in environments where corrosion is a problem

Typical Wire Range	Stock No.
22-14	37015
18-10	37016



STANDARD SPRING CONNECTORS

- Twists on for a secure connection
- Color-coded to easily match to wire range
- Can be used with stranded or solid wire

molex



Wing lock connector

Typical Wire Range	Stock No.	Color	Molex No.
18-12	37034	Yellow	19160-0044
16-10	37035	Red	19160-0045
14-8	37036	Gray	19160-0046
12-6	37037	Blue	19160-0047

Wire range shown for two wires.



Twist lock connector

Typical Wire Range	Stock No.	Color	Molex No.
22-16	37071	Gray	19160-0039
22-14	37072	Blue	19160-0040
22-14	37073	Orange	19160-0041
18-10	37074	Yellow	19160-0042
18-10	37075	Red	19160-0043

Wire range shown for two wires.

CRIMPING TOOL FOR CLOSED END CONNECTORS

Multiple Crimping Position



Stock No. 477

- Crimps connectors 37024, 37021 and 37020



Stock No. 478

- Crimps connectors 37020 and 37025

NYLON TAP & RUN SPLICE WIRE TAP KIT

molex

30 Assorted Pieces Stock No. 38513

- Featuring dual barb insulation piercing design ensuring reliable contact
- No stripping, twisting or soldering
- Color-coded insulator allows easy identification of terminal size and wire gauge

See www.waytekwire.com for contents



CRIMPABLE BATTERY LUGS



- Manufactured from 100% copper
- Tin plated to add conductivity and protection against corrosion
- Polarity marked



Wire Ga	Fits Battery Post Type	Straight Stock No.	Right Angle Stock No.	Left Elbow Stock No.	Right Elbow Stock No.
6	Universal	36300	----	----	----
4	Universal	36301	----	----	----
2	Positive	36302	----	----	----
2	Negative	36303	----	----	----
1	Positive	36304	----	----	----
1	Negative	36305	----	----	----
1/0	Positive	36306	36320	36332	36342
1/0	Negative	36307	36321	36333	36343
2/0	Positive	36308	36322	36334	36344
2/0	Negative	36309	36323	36335	36345
3/0	Positive	36310	36324	36336	36346
3/0	Negative	36311	36325	36337	36347
4/0	Positive	36312	36326	----	----
4/0	Negative	36313	36327	----	----

Product may vary with single or double offset.

CRIMPABLE BATTERY LUG CRIMPING TOOLS



- Stock No. 460**
- Heavy-duty crimping tool
 - Crimps battery lugs from 8ga-4/0

- Stock No. 521**
- Replacement Die Tool Kit for **Stock No. 460 & 470**
 - 4 dies, spring and pin

- Stock No. 470**
- Bench mountable version of **Stock No. 460**
 - Crimps battery lugs from 8ga-4/0

- Stock No. 461**
- Light duty crimping tool
 - Crimps battery lugs from 8ga-1/0

- Stock No. 462**
- Economically priced
 - Used with a hammer for a quick crimp in maintenance and repair situations
 - Handles terminals from 8ga-4/0

BRASS BATTERY LUGS



- Solid brass battery lugs are lead plated for superior conductivity and low electrical resistance
- Used for solder construction only
- Universal type will fit both the positive and negative battery posts
- Furnished with a standard plated nut and square head bolt

Stock No.	Type	Wire Ga
36202	Straight-in	6
36201	Straight-in	2-1
36204	Straight-in	3/0
36209	Split Flag	1/0-2/0



See Solder Pellets and Flux on page 92.

Spare Battery Lug Nuts and Bolts

- All 5/16-18
- Zinc plated

Stock No.	Item
90501	Standard nut
90506	Shoulder nut
90505	1 1/2 bolt
90500	1 1/4 bolt



EYELETS

- Standard eyelets/lugs
- Seamless barrel design
- Flared barrel design for easy wire entry
- Crimps in industry standard tooling
- Wire gauge and stud size marked on terminal
- Heavy-duty 600V+ applications
- Meets UL requirements
- RoHS compliant



Bare Copper
Stock No. 36150

Tinned Copper
Stock No. 36178

Wire Gauge	Stud Size	Bare Copper Stock No.	Tinned Copper Stock No.
8	1/4	----	36160
8	5/16	36121	----
8	3/8	36122	----
6	1/4	----	36163
6	5/16	36124	36164
6	3/8	36125	36165
4	1/4	36126	36166
4	5/16	36127	----
4	3/8	36128	36168
2	1/4	36130	36170
2	5/16	----	36171
2	3/8	36132	36172
2	1/2	36133	----
1	1/4	36134	36174
1	5/16	----	36175
1	3/8	----	36176
1/0	1/4	36138	36178
1/0	5/16	36139	36179
1/0	3/8	36140	36180
1/0	1/2	36141	----
2/0	1/4	----	36182
2/0	5/16	----	36183
2/0	3/8	36144	36184
2/0	1/2	36145	36185
3/0	1/4	36146	----
3/0	1/2	36148	36188
4/0	1/4	----	36189
4/0	3/8	36150	36190
4/0	1/2	36151	36191

All dimensions in inches.

molex



Crimpers



Stock No. 683

- Crimps 1ga-8ga



Stock No. 682

- Crimps 1/0-3/0



Stock No. 681

- Crimps 3/0-4/0

STACKABLE BATTERY LUGS

- 36 anti-rotation teeth keep cables separated on terminals
- Connectors of different gauges can be mixed and stacked
- Tin-plated copper lugs offer the best balance of conductivity and durability
- Use with stud batteries; enables multiple battery hookup
- Corrosion resistant
- Use 3/8"-16 closed cap nut to terminate



Gauge	Stock No.
6	36370
4	36371
2	36372
1	36373
1/0	36374
2/0	36375
3/0	36376
4/0	36377

STACKABLE FLAG BATTERY TERMINAL

- 36 anti-rotation teeth keep cable separated on terminals
- Cast copper - offers best balance of conductivity and durability
- Tin-plated for corrosion resistance
- Enables multiple battery hook-up
- Connectors of different gauges can be mixed
- Use 3/8"-16 closed cap nut to terminate



Gauge	Stock No.
1/0	36378
2/0	36379
3/0	36380

EYELETS/LUGS

Heavy-Duty Tinned Copper Eyelets/Lugs

- Solid electrolytic copper eyelets feature heavier material thickness, larger pads and longer length barrels than standard eyelets
- Electro-tin plated to prevent oxidation and corrosion
- Chamfered barrel entry makes it easy to insert cable

Heavy-Duty Tinned Copper

Extra Heavy-Duty Tinned Copper



Wire Gauge	Stud Size	Heavy-Duty Eyelets Stock No.	Color Codes	Extra Heavy-Duty Eyelets Stock No.
8	1/4	36568	Red	----
8	5/16	36569	Red	----
8	3/8	36570	Red	----
6	1/4	36572	Blue	----
6	5/16	36573	Blue	----
6	3/8	36574	Blue	----
4	1/4	36564	Gray	36350
4	5/16	36565	Gray	36351
4	3/8	36566	Gray	36352
1-2	1/4	36514	Pink	36353
1-2	5/16	36515	Pink	36354
1-2	3/8	36516	Pink	36355
1-2	1/2	36517	Pink	36356
1/0	3/8	36524	Black	36357
1/0	1/2	36525	Black	36358
2/0	3/8	36534	Orange	36359
2/0	1/2	36535	Orange	36360
3/0	3/8	36544	Purple	36361
3/0	1/2	36545	Purple	36362
4/0	3/8	36554	Yellow	36363
4/0	1/2	36555	Yellow	36364

Standard Eyelets/Lugs

- Solid electrolytic copper eyelets
- Wire gauge is stamped on the terminal
- Meets UL requirements

Bare Copper

Tinned Copper



Wire Gauge	Stud Size	Bare Copper Stock No.	Tinned Copper Stock No.
8	1/4	36081	36481
8	5/16	36082	36482
8	3/8	36083	36483
6	1/4	36071	36471
6	5/16	36072	36472
6	3/8	36073	36473
4	1/4	36061	36461
4	5/16	36062	36462
4	3/8	36063	36463
4	1/2	36066	36465
2	1/4	36065	36400
2	5/16	36001	36401
2	3/8	36002	36402
2	1/2	36003	36403
1	1/4	36010	36410
1	5/16	36011	36411
1	3/8	36012	36412
1	1/2	36013	36413
1/0	1/4	36020	36420
1/0	5/16	36021	36421
1/0	3/8	36022	36422
1/0	1/2	36023	36423
2/0	1/4	36030	36430
2/0	5/16	36031	36431
2/0	3/8	36032	36432
2/0	1/2	36033	36433
3/0	1/4	36041	36441
3/0	3/8	36042	36442
3/0	1/2	36043	36443
4/0	1/4	----	36451
4/0	3/8	36052	36452
4/0	1/2	36053	36453

45 and 90 Degree Bend Tinned Copper Eyelets

- Solid electrolytic tinned copper eyelets
- Wire gauge is stamped on the terminal
- Meets UL requirements

45 Degree Bend Tinned Copper

90 Degree Bend Tinned Copper



Wire Gauge	Stud Size	45 Degree Bend Stock No.	90 Degree Bend Stock No.
8	3/8	36883	35883
6	3/8	36873	35873
4	3/8	36863	35863
1	3/8	36812	35812
1	1/2	36813	35813
1/0	3/8	36822	35822
1/0	1/2	36823	35823
2/0	3/8	36832	35832
2/0	1/2	36833	35833
3/0	3/8	36842	35842
3/0	1/2	36843	35843
4/0	3/8	36852	35852
4/0	1/2	36853	35853

CRIMPERS

Eyelet Crimper

Stock No. 497

- Crimps eyelet style copper lug terminals 8ga-4/0
- Includes 3 separate dies



Heavy-Duty Crimper

Stock No. 471

- Ideal for copper eyelets and large terminals
- Adjustable crimping nests, no die changes required
- Clearly marked wire range (8ga-4/0)
- Easy to operate and may be mounted to a bench (Clamps not included)



LEAD BATTERY LUGS

Heavy-Duty Top Post Type

Stock No. 36223

- For 2ga-4/0



Wing Nut Marine Type

Stock No. 36224

- For positive post, 3/8 terminal stud

Stock No. 36221

- For negative post, 5/16 terminal stud
- Brass plated wing nut for marine applications



Military Ordinance Type



Stock No. 36114

- For positive post, 3/8 stud
- Low profile 3/4 high
- Long bolts allow additional power connections
- Mil Spec: A52425-1



Military Ordinance Type



Stock No. 36115

- For negative post, 5/16 stud
- Low profile 3/4 high
- Long bolts allow additional power connections
- Mil Spec: A52425-2



Epoxy Coated Top Post Type

Stock No. 36250 - Black

- For 6-1ga



Epoxy Coated Top Post Type

Stock No. 36251 - Red

- For 6-1ga



- Color coded for easy identification

Top Post Type

Stock No. 36220

- For 6-1ga



Side Post Type

Stock No. 36222

- For 6-1ga
- 3/8 bolt included



- Lead alloy battery terminals for a variety of applications

EYELET, RING & LUG TERMINAL INSULATOR

- Post height: .98 (24.8 mm)
- Inside grip diameter: .50 (12.7 mm)
- Material: PVC
- Can be used with starters, generators, alternators & solenoids



Wire Ga	Black Stock No.	Red Stock No.
18-10	23543	23542
8-2	23545	23544
2-2/0	23547	23546

BATTERY BOLT EXTENDERS

- Solid brass bolt extender and plated steel nut are used for power hook-up for direct connections of accessories to battery
- Side post units are available for a variety of applications



Stock No. 36243



Stock No. 36244

Stock No.	Post Mount	Stud Thread
36243	Side Post - Long Bolt	3/8-24
36244	Side Post - Short Bolt	3/8-16

BATTERY BOOTS

- Use on alternator end of cables or battery posts
- Protects from corrosion and shorting
- Improves product appearance

Alternator Type



Stock No. 23509

Straight-in Type



Stock No. 23500

Stock No. 23501

Marine Type



Stock No. 23514

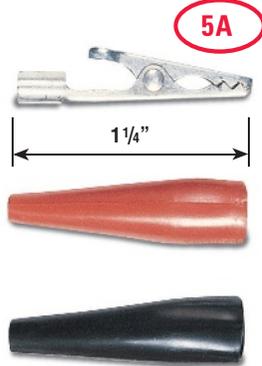
Stock No. 23513

Boot Type	Stock No.	Wire Ga	Color	Post Height in. (mm)	Cable Entry in. (mm)
Straight-in	23500	6-4	Black	.74 (18.8mm)	.37 (9.4mm)
	23501	6-4	Red	.74 (18.8mm)	.37 (9.4mm)
	23502	2-1	Black	.74 (18.8mm)	.50 (12.7mm)
	23503	2-1	Red	.74 (18.8mm)	.50 (12.7mm)
	23504	1/0-2/0	Black	.74 (18.8mm)	.625 (15.9mm)
	23505	1/0-2/0	Red	.74 (18.8mm)	.625 (15.9mm)
Marine	23514	6-1/0	Black	1.9 (48.3mm)	.32 (8.1mm)
	23513	6-1/0	Red	1.9 (48.3mm)	.32 (8.1mm)
Alternator	23508	18-10	Black	1.05 (26.7mm)	.23 (5.84mm)
	23509	18-10	Red	1.05 (26.7mm)	.23 (5.84mm)
	23506	8-2	Black	1.05 (26.7mm)	.5 (12.7mm)
	23507	8-2	Red	1.05 (26.7mm)	.5 (12.7mm)
	23516	2-2/0	Black	1.05 (26.7mm)	.7 (17.78mm)
	23517	2-2/0	Red	1.05 (26.7mm)	.7 (17.78mm)
	23520	3/0-4/0	Black	1.05 (26.7mm)	.9 (22.9mm)
	23521	3/0-4/0	Red	1.05 (26.7mm)	.9 (22.9mm)

CLIPS | Pictures of clips are not actual size.

Mini-gator Clip

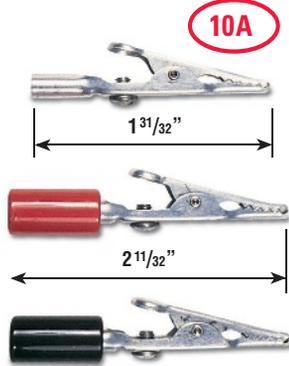
- For miniature work



Steel Clip **Stock No. 30BL**
 Insulator Red **Stock No. 32R**
 Insulator Black **Stock No. 32B**

Alligator Clip

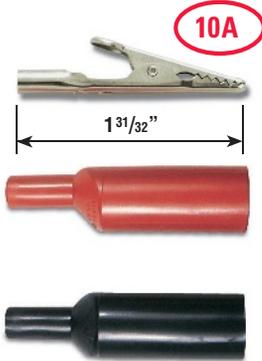
- Screw connection



Metal Screw Clip **Stock No. 60S**
 Metal Screw Clip with insulator handles:
 Red **Stock No. 60HSR**
 Black **Stock No. 60HSB**

Alligator Clip

- Conventional type



Metal Clip **Stock No. 60**
 Stainless Steel Clip **60SS**
 Insulator Red **Stock No. 62R**
 Insulator Black **Stock No. 62B**

- Used with clip 60, 60S and 60SS

Alligator Clip with Full-cover insulator

- Assembled



Metal Clip **Stock No. 60** with full cover insulator
 Red **Stock No. 65R**
 Black **Stock No. 65B**

TEST CLIP



- Used to temporarily hold connections together for testing or soldering

Red Insulator



Black Insulator



Type	Test Clip Stock No.	Amps	Red Insulator Stock No.	Black Insulator Stock No.	Length of Clip
General Purpose	48	10	49R	49B	2
25 Amp	24	25	26R	26B	2 ^{27/32}

BATTERY CLAMPS

Miniature Battery Clamp

50A



- Insulated handles
- Up to 10 ga wire
- Red **Stock No. 46R**
- Black **Stock No. 46B**

Extra Heavy-Duty Battery Clamp

600A



- Vinyl clad handles
- For 2 and 4 ga wire
- Red **Stock No. 50**
- Black **Stock No. 51**

Standard Battery Clamp

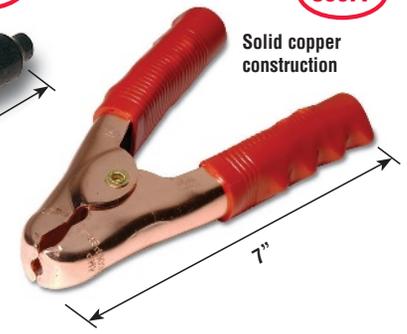
200A



- Insulated handles
- Red **Stock No. 41R**
- Black **Stock No. 41B**

Extra Heavy-Duty Battery Clamp

800A



- Insulated handles
- Use with 1/0 and 2/0 wire only
- Red **Stock No. 52**
- Black **Stock No. 53**

BOOSTER CABLES

Parrot Type



E-Z Reach™ Type



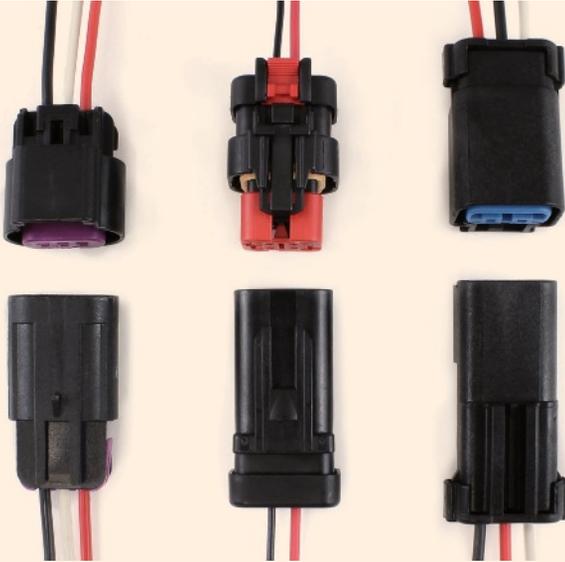
- 100% copper conductors
- Twin tangle-free cables with a flexible dual bonded construction
- Clamps and cables are fully insulated and color coded for polarity identification
- Clamps provide easy attachment to top or side terminal batteries

Wire Ga	Type	Length Ft.	Weight Lbs.	Color	Stock No.
4	E-Z Reach™	12	7	Black / White	10145
4	E-Z Reach™	16	8	Black / White	10146
2	Parrot	20	11	Red / Black	10147
2	Parrot	24	16	Red / Black	10148

TIPS ON SELECTING CONNECTORS

There are dozens of connector varieties and thousands of individual connectors, so even an experienced engineer can find it difficult to select the right connector for the job. Fortunately, connector confusion can be minimized by gathering information based on four key technical factors.

By Design World Staff | April 17, 2012



There are many types of connectors and it can be difficult to select the right one for each application. While they add a small premium to the initial cost of cabling, they will pay for themselves if they eliminate a few minutes of downtime on a busy production line.



NUMBER OF CONTACTS:

The number of contacts in the connector should match or exceed the number in the cable. But one common mistake is to miscount by not considering the ground. Cable conductor counts typically include ground while connectors do not.

WIRE GAUGE (AWG):

The cable wire gauge needs to be within the allowed range of the connector contacts. In general, screw contacts will accommodate a broader range of wire gauges than comparable crimped contacts.

CABLE OUTSIDE DIAMETER (OD):

This fundamental piece of dimensional information is too often overlooked during the specification process. Forgetting OD can have serious consequences. If the OD of the cable is too small relative to the housing, a poor seal will result, creating a performance issue. If the OD is too big, the cable may not fit in the housing easily or at all, creating a potentially costly installation issue.

MAXIMUM VOLTAGE AND CURRENT:

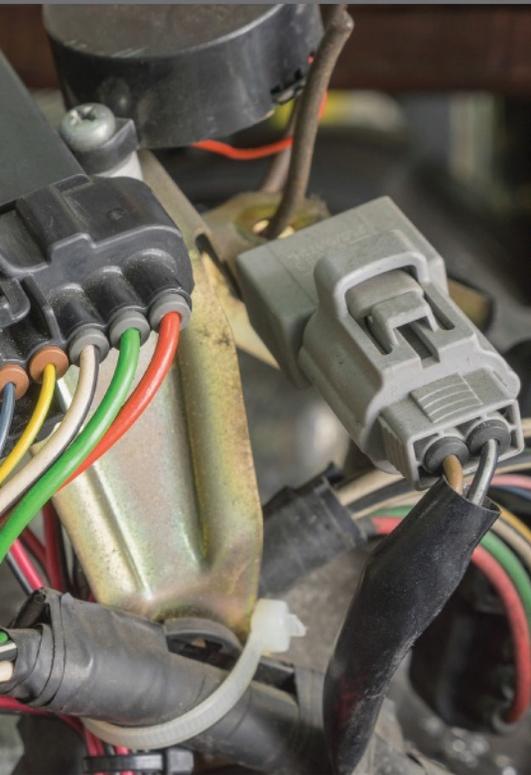
Double check to make sure the application's voltage and current are within the rated capacity of the connector. For safety, this is the cardinal rule of specifying connectors.

Taken together, these factors determine whether the connector will function as a true extension of a given cable. It's important to emphasize that all four factors must be taken into consideration. A connector, for instance, may meet the requirements on a number of contacts, wire gauge, and outside diameter, but not satisfy the application's current or voltage requirements.

The four key connector factors should be thought of as a starting point. They don't capture the effects of difficult operating environments or unusual electrical requirements. But, they will help you quickly narrow the otherwise overwhelming field of connector products.

CONNECTORS

Weather Pack	40	Amphenol AT Series	52-53
56 Series	41	Amphenol AHD Series	53
GT 150 Series	42	Amphenol Superseal 1.5 Series	54
GT 280 Series	43	Ampseal Series 16	54
Metri-Pack 150 Series	44	Molex XRC Series	55
Metri-Pack 280 Series	45	Molex ML-XT Series	56
Sealed Splice Pack System	46	Molex Mizu-P25 Mini Series	57
Metri-Pack 480 Series	47	Molex Mini Fit Jr. Series	57
Apex 2.8 Series	47	Molex MXPI20 Sealed Series	58
Metri-Pack 630 Series	48	Molex MXI50 Sealed Series	59
HES Connection System	49	Molex MLX 2.13MM Series	60
Amphenol ATM Series	51	Anderson Power Series	61
Amphenol ATP Series	51	Trailer Connectors	62-64



• APTIV •

Amphenol®

molex

CH Cole Hersee®
A Littelfuse® Brand

Pollak®

APP
Anderson Power Products®

WEATHER PACK

- Tower half connector body comes with a self lubricating silicone seal to reduce the engagement assembly force



16V
20A

Cable Seals



Cable dia. (mm)	GPT wire Ga	SXL wire Ga	Seal Color	Stock No.	APTIV No. (formerly Delphi)
(1.70-1.29)	---	---	Red	39004	12015899 15324983*
(2.80-2.03)	18-16	20-18	Green	39000	12015323 15324982*
(3.49-2.81)	14	16	Gray	39001	12010293 15324980*
(4.30-3.45)	12	14	Blue	39002	12015193 15324981*

ORDERING NOTES:

- Select connector body style from chart.
 - Select number of terminals needed – one terminal for each contact location.
 - Pick cable seal by wire gauge.
 - Cavity plugs are required for all unused pin locations.
 - Weather Pack crimping tool must be used to assure a good seal.
- * Replacement part for packard number listed above. Changed from 4% oil to 2% oil.



Connector Bodies

Contacts	Receptacle Shroud Half		Plug Tower Half	
	Stock No.	APTIV No. (formerly Delphi)	Stock No.	APTIV No. (formerly Delphi)
1	38040	12010996	38041	12015791
2	38042	12010973	38043	12015792
3	38044	12010717	38045	12015793
4	38046	12010974	38047	12015797
4-Square	38086	12015024	38087	12015798
5-Round	38092	12065158	38091	12034342
6	38048	12010975	38049	12015799

All connector bodies are straight (in a row) except 4-Square contact body which is two rows of two and 5-Round

Cavity Plug

Stock No. 39010 (APTIV No. (formerly Delphi) 12010300)



- Use the cavity plug for all pin locations not filled with terminals
- Possible green or gray color

Terminals

Wire Ga	Male Terminal			Female Terminal			Recommended Tools
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	
20-18	30034	30034R	12089040	30035	30035R	12089188	402/440/408/564
16-14	31034	31034R	12124582	31035	31035R	12124580	402/440/408/564
12	32038	32038R	12124587	32039	32039R	12124581	408/474/564

*Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.

Female terminal for tower half

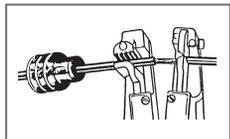


Male terminal for shroud half

Terminals shown with cable seal. Order separately.

TYPICAL ASSEMBLY INSTRUCTIONS

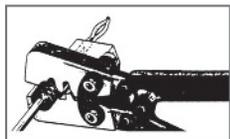
These assembly instructions apply to both the Weather Pack and the Metri-Pack connector series.



- Apply seal to cable, before stripping insulation.



- Align seal with cable insulation.



- Put terminal in crimping tool, then position wire and seal in place.



- Crimp and visually inspect for a good crimp before installing in connector body.

Weather Pack Hand Tool

Stock No. 402

- Crimps 20-14 ga terminals and cable seals in one operation
- Ratchet assembly assures a perfect crimp every time



Weather Pack Hand Tool

Stock No. 440

- Similar to the 402 with shorter handles
- Crimps 20-14 ga terminals and cable seals in one operation



Weather Pack Terminal Removal Tool

Stock No. 421

- Removes Weather Pack socket and pin terminals from the connector bodies



Hand Tool

Stock No. 408

- Crimps a variety of terminals and cable seals in separate operations
- Ratchet assembly assures a perfect crimp every time
- For 20-14 ga terminals



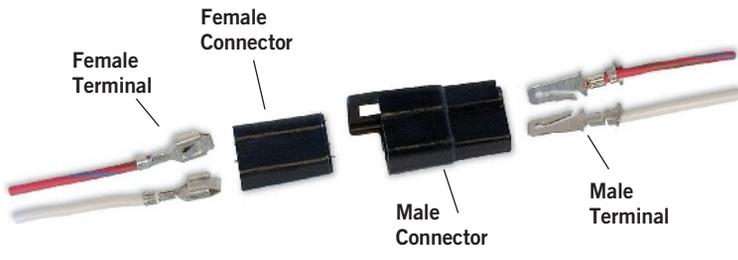
Economically priced Crimper

Stock No. 533

- Economical tool crimps 22-14 ga sealed Metri-Pack 150 and 280 series, and Weather Pack terminals and seals
- Compact parallel jaw design eliminates terminal rocking



56 SERIES CONNECTORS



- Economically priced
- Locks together for a positive contact
- For heavy-duty use in many automotive applications
- Use crimping tool Stock No. 401 or 507 for best results
- Male body half is made with a locking clip, as shown in picture

49A

Available in one through six contact configurations

Connector Bodies

Contacts	Male Connector			Female Connector		
	Stock No.	APTIV No. (formerly Delphi)	Color	Stock No.	APTIV No. (formerly Delphi)	Color
1	38000	2984528	Black	38001	2977253	Black
2	38002	2984883	Black	38003	2973781	Black
3	38004	2984678	Black	38005	2984378	Black
4	38006	6294544	Black	38007	2977048	Black
5	38010	3138080	Black	38011	2973422	Black
6	38008	2977042	Natural	38009	2977044	Black



Male

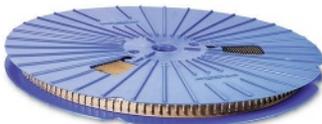


Female

Terminals

Wire Ga	Male Terminal			Female Terminal			Recommended Tools
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	
18	30030	30030R	2965481	30031	30031R	2965510	401 or 507
16-14	31030	31030R	2971962	31031	31031R	2965867	401 or 507
12	32030	32030R	2971859	32031	32031R	2989877	507

* Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.



Typical reel of terminals available from Waytek

CRIMPING TOOLS

Hand Tool Stock No. 401

- Crimps 20-14 ga male and female terminals
- Ratchet assembly assures a perfect crimp every time



Hand Tool Stock No. 507

- Crimps 20-10 ga male and female terminals in the Metri-Pack 56 Series
- Crimps core wings only



METRI-PACK CRIMPING TOOLS

Hand Tool Stock No. 474

- Crimps 12 ga terminal and cable seal in separate operations



Economically priced Crimper Stock No. 533

- Crimps 22-14 ga sealed Metri-Pack 150 and 280 series, and Weather Pack terminals and seals
- Compact parallel jaw design eliminates terminal rocking



Hand Tool Stock No. 509

- Crimps 20-14 ga male and female terminals in the Metri-Pack 150 and 280 series
- Ratchet assembly assures a perfect crimp every time



Universal Metri-Pack Terminal Removal Tool Stock No. 424 (APTIV No. (formerly Delphi) 12094430)

- Removes Metri-Pack socket and pin terminals from the connector bodies
- May be used with the Metri-Pack 150 and 280 series



GT 150 SERIES CONNECTORS

The GT terminal and connector system was developed with global customer input at every design phase and has a compact package size suited to fit the shrinking space requirements of today's vehicles.

- Rugged and waterproof for off-road applications
- Locks with integrated Connector Position Assurance (CPA)
- Tangless terminals with stamped serrations
- Secondary lock capabilities including (TPA) Terminal Position Assurance and Primary Lock Reinforcement (PLR) with positive connector seal retention or a Slide Lock Cover (SLC) for unsealed systems
- Female terminals compatible with ISO or SAE blades
- In-line connectors are ideally suited for space limited applications



CONNECTORS

Connector Bodies

Contacts	Male		Female	
	Stock No.	APTIV No. (formerly Delphi)	Stock No.	APTIV No. (formerly Delphi)
2	38322	13510099	38323	13510085
3	38318	13519049	38319	13519047
4	38324	15326820	38325	15326815
5	38326	15326827	38327	15326822
8	38330	15326840	38331	15326835
10	38332	15326847	38333	15326842
12	38334	15326845	38335	15326849
14	38392	15326922	38391	15326917
16	38336	15326868	38337	15326863



15A

TPA

Contacts	Stock No.	APTIV No. (formerly Delphi)
2	38339	15355128
3	38345	15418545
4	38340	15418546
5	38341	15418547
8	38343	15418415
10	38344	15418288
12	38349	15359004
14	38347	15359005
16	38346	15358785



NEW

Tin Plated Terminals

Wire Ga	Male		Female	
	Stock No.	APTIV No. (formerly Delphi)	Stock No.	APTIV No. (formerly Delphi)
22-20	30470	15326268	30471	12191818
18-16	31470	15326269	31471	12191819



Cable Seal

Wire Ga	Color	Stock No	APTIV No. (formerly Delphi)
22-20	White	39024	15366021
18-16	Blue	39025	15366060



Cavity Plug

Stock No. 38348
(APTIV No. (formerly Delphi) 15305171)



Crimping Tool

Stock No. 400

- 22-16 ga terminals

J1939 CAN-Bus Terminating Resistor

Contacts	Stock No.	APTIV No. (formerly Delphi)
2	38321	15429045



Gold Plated Terminals

- For J1939 CAN-Bus terminating resistor

Wire Ga	Female	
	Stock No.	APTIV No. (formerly Delphi)
20	31472	15326426
18	31473	15326427



Stock No. 31472



Terminal Removal Tool

Stock No. 431

- Pull to seat removal terminal

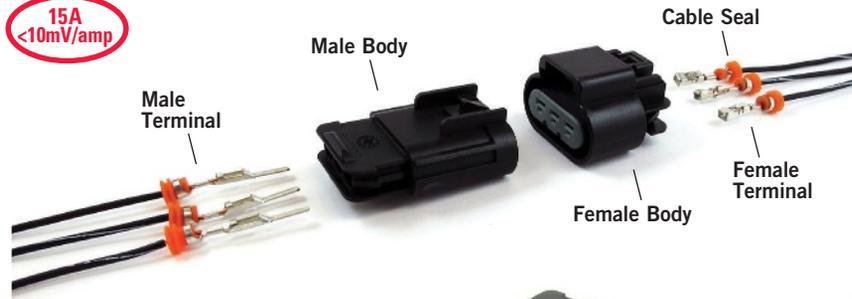
GT 280 CONNECTORS

- Small size suited to fit the shrinking space requirements of today's vehicles and mobile equipment
- Features silver interface platings to meet the SAE J2030 heavy-duty electrical connector standard


 257°F (125°C)
 -40°F (-40°C)


15A
 <10mV/amp

- CPA capabilities for improved and more robust system design
- Seal retention and protection features help prevent loss or damage to the connector seal



Connector Bodies

Contacts	Male		Female	
	Tower Half Stock No.	APTIV No. (formerly Delphi)	Shroud Half Stock No.	APTIV No. (formerly Delphi)
2	38373	15326678	38372	13518845
3	38375	15326623	38374	15326614
4	38377	15326633	38376	13521459
5	38379	15326647	38378	13521463
6	38381	15326640	38380	13521467
8	38383	15326655	38382	15326654
10	38385	15326661	38384	15326660
12	38387	15326915	38386	15326910
14	38392	15326922	38391	15326917
16	38389	15326667	38388	15326666



Stock No. 38381



Stock No. 38380



Stock No. 38389



Stock No. 38388

Terminals

Wire Ga	Male Terminal			Female Terminal		
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.	APTIV No. (formerly Delphi)
22-20	30472	30472R	15304730	30473	30473R	15304718
18-16	30474	30474R	15304731	30475	30475R	15304719
16-12	30476	30476R	15304732	30478	30478R	15304717
12	----	----	----	30477	30477R	15326004

* Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.



Typical Male



Typical Female

Cable Seals

Cable Dia. (mm)	Wire Ga	Seal Color	Stock No.	APTIV No. (formerly Delphi)
(1.20-1.90)	22-20	Orange	39035	15366065
(1.86-2.40)	18-16	Yellow	39036	15366066
(2.50-3.20)	14-12	Tan	39037	15366067
(3.40-3.90)	10	Purple	39038	12191235

ORDERING NOTES:

1. Select connector body style from chart.
2. Select number of terminals needed – one terminal for each contact location.
3. Pick cable seal by wire gauge.
4. Cavity plugs are required for all unused pin locations.



Cavity Plug
 Stock No. 39039
 (APTIV No. (formerly Delphi) 15305170)

CPA 16-8 ga Cavity GT 280
 Stock No. 39040
 (APTIV No. (formerly Delphi) 15317832)



Crimper
 Stock No. 395



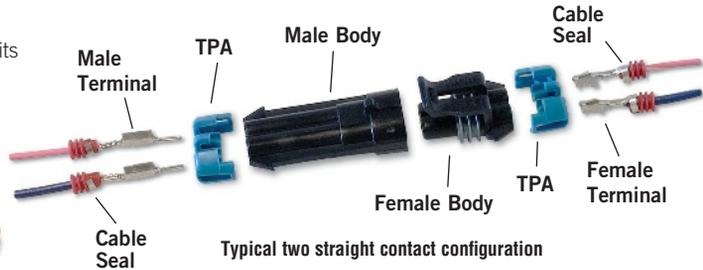
Removal Tool
 Stock No. 396

METRI-PACK 150 SERIES SEALED CONNECTORS

- In-line connectors are ideally suited for space-limited applications
- Use in high demand situations along with low-energy electronic circuits
- TPAs (terminal position assurance) hold the terminals firmly in the connector bodies and act as strain reliefs
- CPAs (Connector Position Assurance) secure mating halves together
- Triple-rib silicone coated cable seals add the confidence of a totally sealed configuration
- Empty cavities must be filled with cavity plugs



16V
14A



Typical two straight contact configuration

Cable Seals

Cable dia. (mm)	GPT wire Ga	SXL wire Ga	Seal Color	Stock No.	APTIV No. (formerly Delphi)
(2.15-1.60)	20-18	22-20	White	39045	15324976
(2.80-2.03)	18-16	20-18	Dark Red	39008	15324973

ORDERING NOTES:

1. Select connector body style from chart.
2. Select number of terminals needed – one terminal for each contact location.
3. Pick cable seal by wire gauge.
4. Cavity plugs are required for all unused pin locations.
5. Metri-Pack crimping tool must be used to assure a good seal.

Connector Bodies

Contacts	Male Body		Female Body	
	Stock No.	APTIV No. (formerly Delphi)	Stock No.	APTIV No. (formerly Delphi)
2	38200	12162000	38201	12052641
3	38203	12129615	38204	12110293
4	38206	12162102	38207	12162144
6	38209	12124107	38210	12052848
8	38218	12047931	38220	12047937
10	38225	12045808	38226	12065425

These connector bodies are straight (in a row) except 6, 8 and 10 are in rows of two.

TPA

Contacts	Stock No.	APTIV No. (formerly Delphi)	Color
2	38202	12052634	Blue
3	38205	12052845	Natural
4	38208	12047948	Black
6	38211	12052850	Gray
8	38223	15324525	Black
10	38224	12124264	Gray



Removal Tool

Stock No. 422
(APTIV No. (formerly Delphi) 12094429)



Cavity Plug

Stock No. 39011
(APTIV No. (formerly Delphi) 12059168)



CPA

Stock No. 38230
(APTIV No. (formerly Delphi) 12020833)
• Fits 3-10 contacts

Terminals

Wire Ga	Male Terminal			Female Terminal			Recommended Tools
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	
22-20	30071	30071R	12077628	30072	30072R	12084200	509/559
18-16	31076	31076R	12045773	31077	31077R	12048074	

* Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.



METRI-PACK 150.2 SERIES SEALED CONNECTORS

- Pull to seat connection
- In-line connectors are ideally suited for space-limited applications
- Use in high demand situations along with low-energy electronic circuits

2-Way Female Connector

Stock No. 38231



Female Terminal

Stock No. 31089

- 18-16 ga
- Crimp tools: Stock No. 533 & 509 page 41

SEALED ELECTRIC HEADERS

The Metri-Pack 150 Series sealed electric header is a rugged system designed for severe underhood environments.

- Offered in 18 or 30 pin configurations
- Ideally suited for critical, low energy electronic applications which require protection from environmental hazards
- Uses pull to seat technology



Stock No. 38219



Stock No. 38221

Contacts	Female Body	
	Stock No.	APTIV No. (formerly Delphi)
18	38219	15492546
30	38221	15492542

Connector bodies are in rows of three.

Terminal

Stock No. 31091
(APTIV No. (formerly Delphi) 12103881)
• 18-16 ga



Crimping Tool

Stock No. 508

(APTIV No. (formerly Delphi) 12039500)
• Crimps 22-16 ga

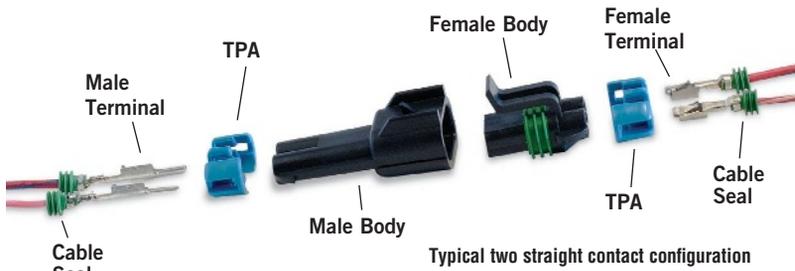
Removal Tool

Stock No. 431

(APTIV No. (formerly Delphi) 12180559)



METRI-PACK 280 SERIES SEALED CONNECTORS



Typical two straight contact configuration

- In-line connectors feature high current and high current density in a small compact design
- Excellent resistance to temperature, chemicals and abrasion
- Works in conjunction with the splice pack components shown on page 46
- May be used in under-hood automotive applications as well as most marine, off-road and agricultural applications



Cable Seals

Cable Dia. (mm)	GPT Wire Ga	SXL Wire Ga	Seal Color	Stock No.	APTIV No. (formerly Delphi)
(1.70-1.29)	22-20	22-18	Red	39004	12015899 15324983*
(2.15-1.60)	20-18	22-20	Purple	39007	15324985
(2.80-2.03)	18-16	20-18	Green	39000	12015323 15324982*
(3.49-2.81)	14	16	Gray	39001	12010293 15324980*
(4.30-3.45)	12	14	Blue	39002	12015193 15324981*

ORDERING NOTES:

1. Select connector body style from chart.
2. Select number of terminals needed – one terminal for each contact location.
3. Pick cable seal by wire gauge.
4. Cavity plugs are required for all unused pin locations.
5. Metri-Pack crimping tool must be used to assure a good seal.

* Replacement part for APTIV number listed above. Changed from 4% oil to 2% oil.

Connector Bodies

Contacts	Male Body		Female Body	
	Stock No.	APTIV No. (formerly Delphi)	Stock No.	APTIV No. (formerly Delphi)
1	38060	12065171	38061	12065172
2	38062	15300002	38063	15300027
3	38064	15300003	38065	12040977
4	38067	12129600	38057	12129565
5	38068	12186400	38069	12084891
6	---	---	38076	12059573

All connector bodies are straight (in a row).



Cavity Plug
Stock No. 39010

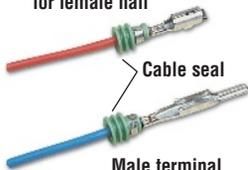
(APTIV No. (formerly Delphi) 12010300)
• Possible green or gray color



Removal Tool
Stock No. 422

(APTIV No. (formerly Delphi) 12094429)

Female terminal for female half



Male terminal for male half

Terminals shown with cable seal. Order separately.

Terminals

Wire Ga	Male Tanged Terminal			Female Tanged Terminal			Recommended Tools
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	
22-20	30029	30029R	12124977	30032	30032R	12084201	** 464/408
18-16	30036	30036R	12048159	30037	30037R	12077411	** 464/408/559
14-12	31074	31074R	12129497	31075	31075R	12129493	408/474/509/559
12-10	32034	32034R	12048254	32035	32035R	12077413	408/474/559

* Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.
** Crimps core wings only

TPA

Contacts	Male			Female		
	Stock No.	APTIV No. (formerly Delphi)	Color	Stock No.	APTIV No. (formerly Delphi)	Color
1	38034	12065249	Black	38034	12065249	Black
2	38035	15300014	Blue	38035	15300014	Blue
3	38036	15300015	Natural	38037	12034145	Black
4	38023	15324063	Blue	38022	15300016	Black
5	38038	12084673	Black	38039	15324857	Black
6	---	---	---	38077	12059195	Blue



Typical reel of terminals available from Waytek

METRI-PACK CRIMPING TOOLS

Hand Tool Stock No. 407

- Crimps a variety of unsealed Metri-Pack Terminals
- For 12-10 ga terminals
- Ratchet assembly assures a perfect crimp every time



Hand Tool Stock No. 408

- Crimps a variety of terminals and cable seals in separate operations
- Ratchet assembly assures a perfect crimp every time
- For 20-14 ga terminals



Hand Tool Stock No. 464

- Crimps a variety of terminals in separate operations
- For 20-14 ga terminals
- Crimps core wings on 150 and 280 Metri-Pack series
- Ratchet assembly assures a perfect crimp every time



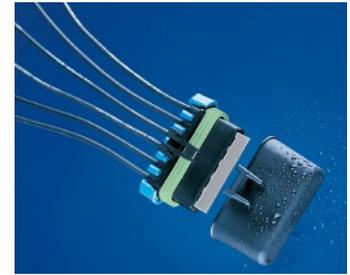
Economically priced Crimper Stock No. 533

- Economical tool crimps 22-14 ga sealed Metri-Pack 150 and 280 series, and Weather Pack terminals and seals
- Compact parallel jaw design eliminates terminal rocking



SEALED SPLICE PACK SYSTEM

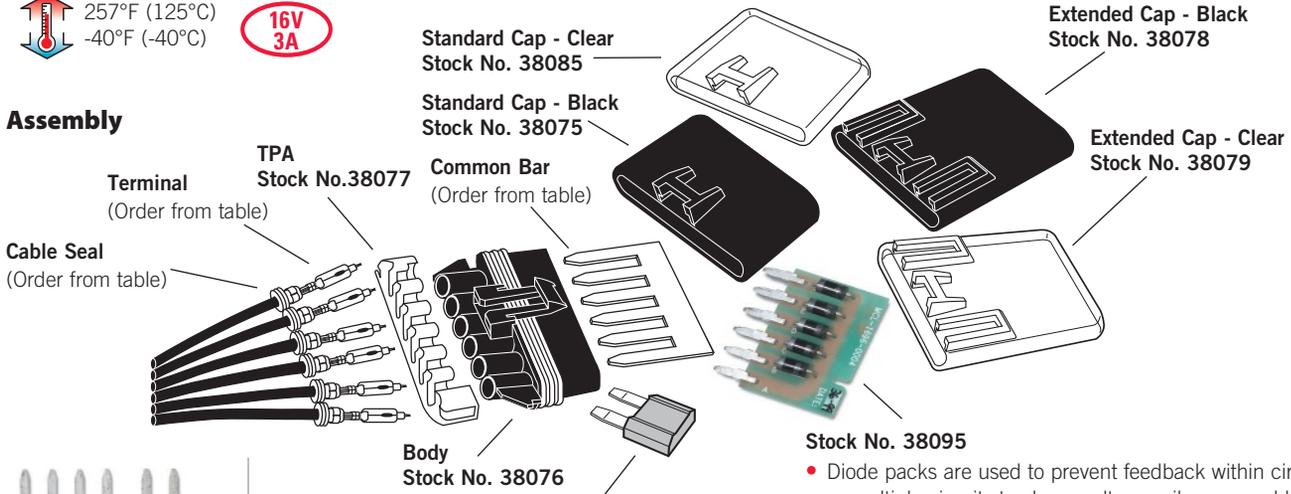
- Becomes an in-line fuse holder for one to three circuits when used with mini fuses
- Common busbar converts the unit into a convenient splicing system
- Sealed terminals and cap offers a completely weathertight assembly
- Complete assembly requires cable seals, terminals, connector body, cap and any common bars
- Unused pin locations need a cavity plug, and the TPA helps keep the terminals from pulling out
- For a perfect crimp, ratchet tools should be used
- Mounting clips are offered to attach the assembly to your application
- Extended caps are a variation of the popular Splice Pack Cap
- Mini fuses and the busbar system can also be used with these caps
- Caps are designed to accommodate diodes, blade mount circuit breakers, and have special grooves so cable ties can be added to provide additional locking security
- Connector parts are part of the Metri-Pack sealed connector 280 series, on page 45




 257°F (125°C)
 -40°F (-40°C)


 16V
 3A

Assembly



Common Bar

Gangs	Stock No.
2	38071
3	38072
4	38073
6	38074

Circuit Breakers, Diode and Mini Fuse

- Diode for use only with **Stock No. 38078** and **38079**

Stock No. 38095

- Diode packs are used to prevent feedback within circuits or multiple circuits to clamp voltage spikes caused by electrical fields collapsing within coils
- Boards are designed to be plugged into the connector body of the system
- Add either extended cap to create a sealed system
- Cap can be removed for easy service ability

Mounting Clips



Straight In Clip Stock No. 38080

- Fits either style cap

90° Clip Stock No. 38081

- Fits either style cap



Tree Mount Clip Stock No. 38082

- Fits either style cap

Offset Clip Stock No. 38084

- Fits extended cap only

Cavity Plug Stock No. 39010



Cable Seals



- Cavity plugs required for all unused pin locations
- Possible green or gray color

Cable dia. (mm)	GPT wire Ga	SXL wire Ga	Stock No.	Seal Color
(1.70-1.29)	----	----	39004	Red
(2.80-2.03)	18-16	20-18	39000	Green
(3.49-2.81)	14	16	39001	Gray
(4.30-3.45)	----	14	39002	Blue

Diodes

- Mounts in most mini fuse holders
- Works with the extended cap



1 Amp Diode
Stock No. 46880

3 Amp Diode
Stock No. 46881

6 Amp Diode
Stock No. 46882

Terminals

- One terminal for each contact location needed
- Terminals available on reels
- Special tooling needed for use of reels not available from Waytek



Terminal shown with cable seal.
Order separately.

Wire Ga	Female Terminal Stock No.	Reel Stock No.	APTIV No. (formerly Delphi)	Recommended Tools
18-16	30037	30037R	12077411	** 464/408
14-12	31075	31075R	12129493	474/509
12-10	32035	32035R	12077413	474

** Crimps core wings only



See tool descriptions on pages 66 - 71.



METRI-PACK 480 SERIES SEALED CONNECTORS

- In-line connectors are well suited for the rigorous demands of under-hood vehicle, marine and industrial applications
- Triple-rib silicone coated cable seals add the confidence of a totally sealed configuration
- Empty cavities must be filled with cavity plugs

257°F (125°C)
-40°F (-40°C)

42A
<3mV/amp



Typical two straight contact configuration

TPA

Contacts	Stock No.	APTIV No. (formerly Delphi)	Color
2	38124	12059897	Black
3	38125	12131543	Black

Terminals

Wire Ga	Male Terminal			Female Terminal		
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)
16-14	31092**	31092R	12065196	31093	31093R	12048451
12	32092	32092R	12065197	32093	32093R	12052139
10	32094	32094R	12052172	----	----	----

* Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.

** Waytek does not stock crimpers for this part.

Connector Bodies

Contacts	Male Body Stock No.	APTIV No. (formerly Delphi)	Female Body Stock No.	APTIV No. (formerly Delphi)
2	38120	12065863	38121	12052613
3	38122	15344628	38123	12131592

2 contact connector bodies are straight (in a row)

3 contact connector bodies are stacked (in a triangle)

Cable Seal

Cable dia. mm	Wire Ga	Seal Color	Stock No.	APTIV No. (formerly Delphi)
2.85-2.01	18-16	White	39012	15324988
3.75-2.81	14-12	Red	39013	15324989
4.50-3.61	10	Purple	39014	15324990

ORDERING NOTES:

- Select connector body style from chart.
- Select number of terminals needed – one terminal for each contact location.
- Pick cable seal by wire gauge.
- Cavity plugs are required for all unused pin locations.

Cavity Plug

Stock No. 39015

(APTIV No. (formerly Delphi) 12066082)

- Possible green or gray color

Crimping Tool

Stock No. 553

(APTIV No. (formerly Delphi) 12071687)

- For 12-10ga Metri-Pack 480 and 630 terminals only

Removal Tool

Stock No. 424

(APTIV No. (formerly Delphi) 12094430)

APEX 2.8 CONNECTORS



- Circumferential interface seal
- Heavy-duty connectors for demanding environments
- For high current automotive applications up to 40A
- Most compact 2.8 mm system in the industry
- Fully assembled connector for ease of use

257°F (125°C)
-40°F (-40°C)

40A



Connector Bodies

Contacts	Male		Female	
	Body Stock No.	APTIV No. (formerly Delphi)	Body Stock No.	APTIV No. (formerly Delphi)
2	38853	54200210	38852	54200206
3	38855	54200312	38854	54200308
4	38856	54200413	38110	54200409
6	38858	54200612	38857	54200608

Stock No. 38855

Stock No. 38854

Terminals

Wire Ga	Male Terminal			Female Terminal		
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)
20-18	38851	38551R	54001804	38113	38113R	10757690
16-14	38850	38550R	54001401	38116	38116R	10762803

Crimp Dies

Gauge	Die	Die Locator	
20-14	664	665	Male
20-14	543	545	Female



Die
Stock No. 543



Die-Locator
Stock No. 545

Crimp Tool

Stock No. 385

- Includes custom case
- Dies sold separately



METRI-PACK 630 SERIES SEALED CONNECTORS

- TPAs (terminal position assurance) hold terminals firmly in connector bodies
- Triple-rib silicone coated cable seals add confidence of a totally sealed configuration
- Empty cavities must be filled with cavity plugs
- All connector bodies are straight (in a row)

Application

- Meets or exceeds requirements for most marine, appliance and industrial control applications
- Suited for applications that require protection from environmental hazards

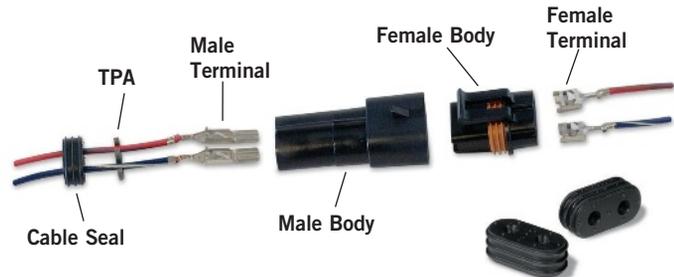


2-Way Connector Bodies

Male Body		Female		
Stock No.	APTIV No. (formerly Delphi)	Body Stock No.	APTIV No. (formerly Delphi)	Cable Seal Wire Ga
38130*	12034269	38143**	12066681	20-16
38130*	12034269	46010**	12033769	14-12
38130*	12034269	38141**	12085030	10

* Need to order 39020 cable seal separately

** Pull to seat



TPA

Stock No.	APTIV No. (formerly Delphi)	Color
38137	12034363	Gray



Terminals

Wire Ga	Male Terminal			Female Terminal		
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)
20-18	30084	30084R	12020125	30085**	30085R	12020156
16-14	31084	31084R	12020126	31085**	31085R	12066614
12-10	32084	32084R	12066493	32037**	32037R	12033997

* Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.

** Pull to seat

Multiple Cable Seal Stock No. 39020

(APTIV No. (formerly Delphi) 12034364)

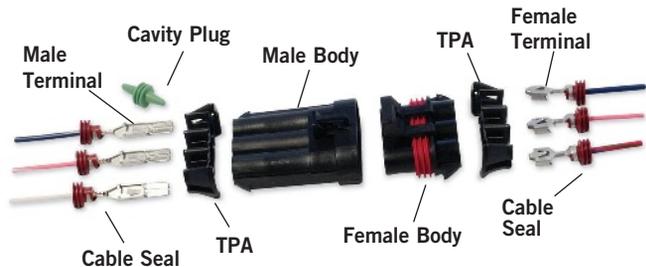
- For connector body 38130
- Seal only available in one size
- 10-8ga

ORDERING NOTES:

1. Select connector body style from chart.
2. Select number of terminals needed – one terminal for each contact location.
3. Female bodies come with multiple Cable Seal. Male body requires one Stock No. 39020. Order separately.

3-Way Connector Bodies

Male Body		Female Body	
Stock No.	APTIV No. (formerly Delphi)	Stock No.	APTIV No. (formerly Delphi)
38132	12124686	38133	12124685



Cable Seals for 3-Way Connectors

Cable dia. (mm)	Wire Ga	Seal Color	Stock No.	APTIV No. (formerly Delphi)
(2.85-2.01)	20-16	Dark Red	39016	12052388
(3.75-2.81)	14-12	Light Gray	39017	12052387
(4.50-3.61)	10	Blue	39018	15324996

ORDERING NOTES:

1. Select connector body style from chart.
2. Select number of terminals needed – one terminal for each contact location.
3. Pick cable seal by wire gauge.
4. Cavity plugs are required for all unused pin locations.

TPA

Stock No.	APTIV No. (formerly Delphi)	Color
38135	12045699	Black



Cavity Plug

Stock No. 39019

(APTIV No. (formerly Delphi) 12059255)



Removal Tool

Stock No. 424

(APTIV No. (formerly Delphi) 12094430)

Terminals

Wire Ga	Male Terminal			Female Terminal		
	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)	Loose Piece Stock No.	Reel Stock No.*	APTIV No. (formerly Delphi)
20-18	30078	30078R	12064734	30079	30079R	12052457
16-14	31078	31078R	12064735	31079	31079R	12052455
12	32078	32078R	12064737	32079	32079R	12052456
10	32080	32080R	12064736	32079	32079R	12052456

* Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.



Crimping Tool

Stock No. 553

- For 12-10 ga Metri-Pack 480 and 630 terminals only

HARSH ENVIRONMENT SERIES (HES) CONNECTION SYSTEM | Deutsch HDP compatible

Connector Bodies

Receptacle for Male Terminals			Plug for Female Terminals			# of cavities	Terminals Required	Wire Type	Seal Color
Stock No.	APTIV No. (formerly Delphi)	Deutsch Stock No.	Stock No.	APTIV No. (formerly Delphi)	Deutsch Stock No.				
38764	15544333	HDP24-24-19PE	38765	15544902	HDP26-24-19SE	19	13 of size 16 6 of size 12	TXL	Blue
38766	15544334	HDP24-24-19PN	38767	15544903	HDP26-24-19SN	19	13 of size 16 6 of size 12	GXL/SXL	Orange
38772	15544331	HDP24-24-21PE	38773	15544899	HDP26-24-21SE	21	17 of size 16 4 of size 12	TXL	Blue
38774	15544332	HDP24-24-21PN	38775	15544901	HDP26-24-21SN	21	17 of size 16 4 of size 12	GXL/SXL	Orange
38780	15544329	HDP24-24-23PE	38781	15544897	HDP26-24-23SE	23	23 of size 16	TXL	Blue
38782	15544330	HDP24-24-23PN	38783	15544898	HDP26-24-23SN	23	23 of size 16	GXL/SXL	Orange
38788	15544327	HDP24-24-29PE	38789	15544895	HDP26-24-29SE	29	6 of size 20 19 pf size 16 4 of size 12	TXL	Blue
38790	15544328	HDP24-24-29PN	38791	15544896	HDP26-24-29SN	29	6 of size 20 19 pf size 16 4 of size 12	GXL/SXL	Orange
38796	15544325	HDP24-24-31PE	----	----	----	31	31 of size 16	TXL	Blue
38798	15544326	HDP24-24-31PN	38799	15544894	HDP26-24-31SN	31	31 of size 16	GXL/SXL	Orange
38802	15544324	HDP24-24-47PE	38803	15544892	HDP26-24-47SE	47	42 of size 20 5 of size 16	TXL	Blue



257°F (125°C)
-67°F (-55°C)

- Rugged construction to withstand harsh environments
- Provide higher current capability, improved sealing, higher terminal retention and a significant cost advantage compared to standard pin and sleeve systems
- Shell size 24
- IP67

CONNECTORS

ORDERING NOTES:

1. Select receptacle and plug connector from chart.
2. Select number of terminals needed – one terminal for each contact location.
3. Pin configuration is on data sheet, located on our website product page.
4. Circuit plugs are required for all unused pin locations.



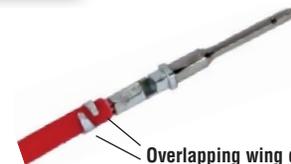
Circuit Plug
Stock No. 38491



Typical Male



Typical Female



Overlapping wing design increases strain relief, offers longer insulation crimp and larger outside diameter cable range capability.

Terminals

Contact Size	Approx. Wire Ga	Male Terminal				Female Terminal				Wire Type
		Loose Piece Stock No.	Reel Stock No.	APTIV No. (formerly Delphi)	Deutsch Stock No.	Loose Piece Stock No.	Reel Stock No.	APTIV No. (formerly Delphi)	Deutsch Stock No.	
20	22-20	30432	30432R	13711542	1060-20-0222	30428	30428R	13711546	1062-20-0222	TXL
20	22-20	30433	30433R	13654423	1060-20-0122	30429	30429R	13654421	1062-20-0122	GXL/SXL
20	18-16	30434	30434R	13711544	1060-20-0222	30430	30430R	13711548	1062-20-0222	TXL
20	18-16	30435	----	13663723	1060-20-0122	30431	30431R	13663727	1062-20-0122	GXL/SXL
16	20-18	30454	30454R	13697408	1060-16-0622	30448	----	13697141	1062-16-0622	TXL
16	20-18	30455	30455R	13663715	1060-16-0122	30449	30449R	13663718	1062-16-0122	GXL/SXL
16	16	30456	30456R	13697409	1060-16-0622	30450	30450R	13697415	1062-16-0622	TXL
16	16	30457	30457R	13663716	1060-16-0122	30451	30451R	13663719	1062-16-0122	GXL/SXL
12	14-12	30436	30436R	13783289	1060-12-0166	30440	30440R	13783289	1062-12-0166	TXL
12	14-12	30437	30437R	13783266	1060-12-0166	30441	30441R	13783290	1062-12-0166	GXL/SXL
12	12-10	30438	30438R	13783269	1060-12-0222	30442	30442R	13783293	1062-12-0222	TXL
16	14-12	30458	30458R	13697410	1060-16-0722	30452	30452R	13697416	1062-16-0722	TXL
16	14-12	30459	30459R	13663717	1060-16-0122	30453	30453R	13663720	1062-14-0122	GXL/SXL

Higher Performance Terminal

- Higher current carrying capability through superior material
- Stainless steel, nickel plated terminals provide stability and protection to contact interface area
- SAE, DIN, JIS cable ranges
- HES pin and sleeve terminals can be mixed with any MIL 39029 terminals

Contact Size	Max. Current Amps
20	18
16	28
12	40

PANEL MOUNT APPLICATION



Panel Mount Hex Nut
Stock No. 38493

- 24 shell size



Panel Mount Seal
Stock No. 38482

- 24 shell size

Crimp Tool
Stock No. 385

- Includes tool frame, case and the installation tools
- Dies sold separately

20 TXL Die **Stock No. 386**
20 GXL/SXL Die **Stock No. 387**

16 TXL Die **Stock No. 388**
16 GXL/SXL Die **Stock No. 389**

12 TXL Die **Stock No. 390**
12 GXL/SXL Die **Stock No. 391**



High Performance INTERCONNECT SOLUTIONS Cross Reference Chart

Both AT Series™ & ML-XT™ are compatible with Deutsch DT Series Connectors. With AT Series™ featuring RockSolid™ Contact technology and ML-XT™ two-shot LSR molding and HCR rear seals delivering full IP69K and J2030 compliance, both product series provide reliability for critical vehicle-wiring applications. A cost-effective solution able to be used in a variety of interconnect applications for harsh environments such as heavy-duty, transportations, marine & agricultural.

Male Receptacle

Cavities	Deutsch DT	AMPHENOL AT	Waytek #	Molex ML-XT	Waytek #
2	DT04-2P	AT04-2P	38171	93444-1202	38421
3	DT04-3P	AT04-3P	38173	93444-2202	38423
4	DT04-4P	AT04-4P	38175	93444-3202	38425
6	DT04-6P	AT04-6P	38177	93444-4202	38427
8	DT04-08PA	AT04-08PA	38179	93444-5212	38429
12	DT04-12PA	AT04-12PA	38181	93444-6212	38431

Female Plug

Cavities	Deutsch DT	AMPHENOL AT	Waytek #	Molex ML-XT	Waytek #
2	DT06-2S	AT06-2S	38170	93445-1202	38420
3	DT06-3S	AT06-3S	38172	93445-2202	38422
4	DT06-4S	AT06-4S	38174	93445-3202	38424
6	DT06-6S	AT06-6S	38176	93445-4202	38426
8	DT06-08SA	AT06-08SA	38178	93445-5212	38428
12	DT06-12SA	AT06-12SA	38180	93445-6212	38430

Receptacles Wedglock

Cavities	Deutsch DT	AMPHENOL AT	Waytek #	Molex ML-XT	Waytek #
2	W2P	AW2P	38183	93447-1003	38435
3	W3P	AW3P	38185	93447-2003	38437
4	W4P	AW4P	38187	93447-3003	38439
6	W6P	AW6P	38189	93447-4003	38441
8	W8P	AW8P	38191	93447-5003	38443
12	W12P	AW12P	38193	93447-6003	38445

Plug Wedglock

Cavities	Deutsch DT	AMPHENOL AT	Waytek #	Molex ML-XT	Waytek #
2	W2S	AW2S	38182	93448-1003	38434
3	W3S	AW3S	38184	93448-2003	38436
4	W4S	AW4S	38186	93448-3003	38438
6	W6S	AW6S	38188	93448-4003	38440
8	W8S	AW8S	38190	93448-5003	38442
12	W12S	AW12S	38192	93448-6003	38444

Amphenol Connectors, pages 51-54
Molex Connectors, pages 55-60

AMPHENOL ATM SERIES™ CONNECTORS | Deutsch DTM compatible

- Specifically designed for small AWG applications, while maintaining the strengths of the AT Series™ product line
- Connector design incorporates an integral latching system that ensures a definitive electrical and mechanical connection
- Thermoplastic housing
- UV resistance
- Sealing system is comprised of an internal and rear silicone, multi-sealing perimeter against environmental ingress
- Copper alloy contacts
- Compatible with other existing standard products industry-wide
- RoHS compliant



Connector Bodies

Description	Plugs		Receptacles	
	Stock No.	Amphenol No.	Stock No.	Amphenol No.
2-Way	38620	ATM06-2S	38621	ATM04-2P
3-Way	38622	ATM06-3S	38623	ATM04-3P
4-Way	38624	ATM06-4S	38625	ATM04-4P
6-Way	38626	ATM06-6S	38627	ATM04-6P
8-Way	38628	ATM06-08SA	38629	ATM04-08PA
12-Way	38630	ATM06-12SA	38631	ATM04-12PA

Wedges

Stock No. 38637

Description	Wedge in Plugs		Wedge in Receptacle	
	Stock No.	Amphenol No.	Stock No.	Amphenol No.
2-Way	38632	AWM-2S	38633	AWM-2P
3-Way	38634	AWM-3S	38635	AWM-3P
4-Way	38636	AWM-4S	38637	AWM-4P
6-Way	38638	AWM-6S	38639	AWM-6P
8-Way	38640	AWM-8S	38641	AWM-8P
12-Way	38642	AWM-12S	38643	AWM-12P

Socket Terminals for Plugs

Wire Ga	Loose Piece Stock No.	Reel Stock No.	Amphenol No.
22-16	38645	38645R	AT62-20-0122
22-20	38648	----	AT62-201-20141



Pin Terminals for Receptacles

Wire Ga	Loose Piece Stock No.	Reel Stock No.	Amphenol No.
22-16	38646	38646R	AT60-20-0122
22-20	38647	----	AT60-202-20141



Sealing Plug
Stock No. 38649
(Amphenol No. AT13-204-2005)
• Size 20

AMPHENOL ATP SERIES™ CONNECTORS | Deutsch DTP compatible

- Designed as a Deutsch DTP series plug-in replacement
- Wire to wire connectors withstand high vibration and harsh environments
- Waterproof IP67, silicone elastomer seal



Connector Bodies Stock No. 38826 Stock No. 38828

Circuits	Plug		Receptacle	
	Stock No.	Amphenol No.	Stock No.	Amphenol No.
2	38826	ATP06-2S	38825	ATP04-2P
4	38828	ATP06-4S	38827	ATP04-4P

Wedges

Stock No. 38835 Stock No. 38836

Circuits	Wedge Plug		Wedge Receptacle	
	Stock No.	Amphenol No.	Stock No.	Amphenol No.
2	38835	AWP-2S	38837	AWP-2P
4	38836	AWP-4S	38838	AWP-4P



Sealing Plug
Stock No. 38491
(Amphenol No. A114017)
• Size 16-12



Terminals

Wire Ga	Barrel Type	Socket Terminal Loose Piece for Plugs		Pin Terminal Loose Piece for Receptacle	
		Stock No.	Amphenol No.	Stock No.	Amphenol No.
14-12	Open	31121*	AT62-12-0166	31120*	AT60-12-0166
14-12	Closed	31123	AT62-203-12141	31122	AT60-204-12141

* Crimp using Deutsch tooling, call sales for more information



Hand Ratchet Tool
Stock No. 588

Ratchet Attachment
Stock No. 610

- For Stock No. 588
- Locator tool
- Works for closed barrel terminals

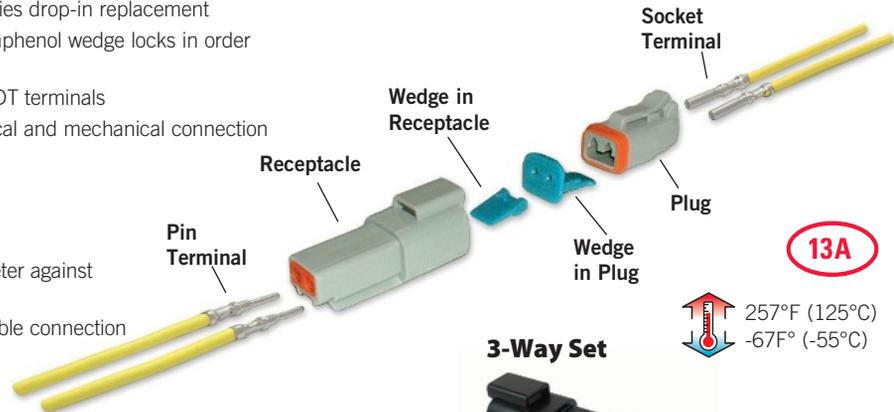
Solid Contacts / Gold Plated

Size	Wire Gauge	Socket	Pin
12	14-12	31131	31132



AMPHENOL AT SERIES™ CONNECTORS | Deutsch DT compatible

- High-performance, cost-effective Deutsch DT Series drop-in replacement
- Amphenol receptacles must be used with the Amphenol wedge locks in order to mate properly with Deutsch DT connectors
- Terminals can be interchangeable with Deutsch DT terminals
- Integral latching system ensures definitive electrical and mechanical connection
- Durable thermoplastic housings offer:
 - excellent UV resistance
 - dielectric/mechanical properties
 - RoHS compliance
- Front and rear silicone seal, multi-sealing, perimeter against environmental ingress
- Nickel plated contacts ensure an electrically-reliable connection
- IP69K



Connector Bodies

Description	Plugs		Plugs w/ Strain Relief Stock No.	Receptacles		Receptacles w/ Strain Relief Stock No.
	Stock No.	Amphenol No.		Stock No.	Amphenol No.	
2-way	38170	AT06-2S	38164	38171	AT04-2P	38169
3-way	38172	AT06-3S	38163	38173	AT04-3P	38168
4-way	38174	AT06-4S	38161	38175	AT04-4P	38167
6-way	38176	AT06-6S	38160	38177	AT04-6P	38166
8-way	38178	AT06-08SA	----	38179	AT04-08PA	----
12-way	38180	AT06-12SA	----	38181	AT04-12PA	----



Wedges

Description	Wedge in Plugs		Wedge in Receptacle	
	Stock No.	Amphenol No.	Stock No.	Amphenol No.
2-way	38182	AW2S	38183	AW2P
3-way	38184	AW3S	38185	AW3P
4-way	38186	AW4S	38187	AW4P
6-way	38188	AW6S	38189	AW6P
8-way	38190	AW8S	38191	AW8P
12-way	38192	AW12S	38193	AW12P

- Deutch cross reference see page 50

Solid Contacts

Size	Wire Ga	Socket	Pin
16	20-16	31133	31134



Socket Terminals for Plugs

Wire Ga	Loose Piece Stock No.	Reel Stock No.	Amphenol No.
16-18	38194	38194R	AT62-16-0122
14-16	38196	38196R	AT62-14-0122



Pin Terminals for Receptacles

Wire Ga	Loose Piece Stock No.	Reel Stock No.	Amphenol No.
16-18	38195	38195R	AT60-16-0122
14-16	38197	38197R	AT60-14-0122



AMPHENOL AT SERIES™ FLANGE MOUNTING



- Environmentally sealed thermoplastic connection system
- One-piece sealed flange design for rapid and secure mounting
- High-performance, cost-effective Deutsch DT replacement

Receptacle

Contacts	Stock No.	Amphenol No.
3	38147	AT04-3P-PM05
4	38148	AT04-4P-PM11
6	38150	AT04-6P-PM05
12	38157	AT04-12PA-PM11



CRIMPERS USED FOR AMPHENOL SERIES

	Stock No.	Deutsch No.	Features
Crimper	637	DTT-16-01	Crimps wire 20-16 ga contact size 20
Crimper	613	DTT-16-00	Crimps Amphenol AT stamped and formal contact terminals 16-14 ga, contact size 16
Crimper	636	DTT-20-00	Amphenol AT Series
Crimper	618	DTT-12-00	For Amphenol DTAP/ATHD, 14-12 ga, contact size 12
Crimper	635	----	Crimps 22-20 ga solid contacts size 20
Crimper	619	----	For Amphenol DTAP/ATHD, 18-14 ga, contact size 18/16/14
Crimper	638	----	12 ga, contact size 12
Crimper	634	----	Ratchet Crimps 20-12 ga solid terminals
Deutsch Removal Tool	550	DT-RT1	For AT/DTV/ATP
Amphenol AT Removal Tool	548	ATRT-100	

See further description on page 69

LIGHTED AMPHENOL AT SERIES™ CONNECTORS

- Highly visible LED 2 position
- Shows when connector is "on"
- Environmentally sealed for harsh environments
- Plug and play - assembled the same as a standard connector



Stock No. 38364

Stock No. 38368

Pins	Stock No.	Volts	Amphenol No.	Wedglock Stock No.	Amphenol No.
2	38364	12	AT06-2S-LED1201	38370	AW2S-LED
2	38368	24	AT06-2S-LED2401	38370	AW2S-LED



AT Series Receptacle 120 OHM Resistor

Stock No. 38360
(Amphenol No. AT04-2P-R120YEL)



Wedglock

Stock No. 38370
(Amphenol No. AW2S-LED)

AMPHENOL AT SERIES™ INTEGRATED CONNECTORS

3-Pin Connectors with Wedglock

- With 120 OHM terminating resistor



	Stock No.	Amphenol No.
Male	38144	AT04-3P-RJ120
Female	38145	AT06-3S-RJ120

3-Pin Splitter Connector Receptacle

Stock No. 38361
(Amphenol No. AT04-3P-RY01)



3-Way Wedge Plug



Stock No. 38146
(Amphenol No. AW3S-1939)



3 Pin Receptacle Wedge

Stock No. 38198
(Amphenol No. AW3P-1939)



AMPHENOL AHD SERIES™ CONNECTORS | Deutsch HD compatible



257°F (125°C)
-67°F (-55°C)

13A

- Designed as a Deutsch HD series drop-in replacement
- Smooth DiagnosticGrade™ housings are non-sealed for controlled applications
- Sealed military style housings have silicone elastomer seal and are threaded for demanding applications
- Corrosion resistant
- 13 amps for size 16 contacts

Connector Bodies

Circuits	Plug			Receptacle		
	Stock No.	Housing Style	Amphenol No.	Stock No.	Housing Style	Amphenol No.
6-way	38669*	Sealed Locking Ring Military Style	AHD16-6-12S-B010	38671*	Sealed Military Style	AHD10-6-12P
6-way	38670*	Smooth DiagnosticGrade™	AHD16-6-12S	----	----	----
9-way	38672**	Sealed Locking Ring Military Style	AHD16-9-96S	----	----	----
9-way	38674**	Sealed Locking Ring Military Style	AHD16-9-1939S	38673**	Sealed Military Style	AHD10-9-1939P
9-way	38676**	Smooth DiagnosticGrade™	AHD17-9-1939S***			

* Use size 12 contacts only ** Use size 16 contacts only *** J1939 Key arrangement



Plug
Stock No. 38670



Receptacle
Stock No. 38671

Terminals

Contact Size	Wire Ga	Pin Terminal		Socket Terminal		Material
		Loose Piece Stock No.	Amphenol No.	Loose Piece Stock No.	Amphenol No.	
16	20-16	31108	AT60-202-16141	31109	AT62-201-16141	Nickel Plated
16	14	31116	AT60-215-16141	31117	AT62-209-16141	Nickel Plated
12	12-14	31122	AT60-204-12141	31123	AT62-203-12141	Nickel Plated
12	12-14	31132	AT60-220-1231	31131	AT60-210-1231	Gold Plated
16	16-20	31134	AT60-202-1631	31133	AT62-201-1631	Gold Plated



Pin Terminal



Socket Terminal

Circuits	Stock No.	Amphenol No.
6-way	38675	AHDC-16-6
9-way	38677	AHDC-16-9



Receptacle Cap - Military Style



Hand Ratchet Tool

Stock No. 588
• Ratchet Attachment
• 20-12 ga
Stock No. 610



Tool

Stock No. 619
• 18-14 ga
• Closed barrel terminals

AMP SUPERSEAL 1.5 MM CONNECTORS

AMP SuperSeal 1.5mm series connector family meets the increasing requirements for reliability in waterproof applications and exceeds the requirements and is qualified for sensor applications.

- Sealing reliability proven under harsh conditions
- Suitable for automotive, truck, bus, or off-road vehicles
- IP67 rated
- Compact system minimizes packaging requirements



14A



Connector Bodies

Contacts	Male Stock No.	TE Connectivity No.	Female Stock No.	TE Connectivity No.
1	38283	282103-1	38279	282079-2
2	38284	282104-1	38280	282080-1
3	38285	282105-1	38289	282087-1
4	38286	282106-1	38290	282088-1
5	38287	282107-1	38281	282089-1
6	38288	282108-1	38282	282090-1



Stock No. 38284



Stock No. 38280



Crimp Tool
Stock No. 385

- Includes custom case
- Dies sold separately

Cable Seals

Wire Ga	Color	Stock No.	TE Connectivity No.
22-20	Green	38276	281934-4
18-16	Yellow	38277	281934-2
16-14	Red	38278	281934-3



Stock No. 38288



Stock No. 38282



Die
Stock No. 542

- Cable range: 22-14 ga
- Contact type: receptacle and tab

Terminals

Wire Ga	Male Stock No.	Reel Stock No.	TE Connectivity No.	Female Stock No.	Reel Stock No.	TE Connectivity No.
22-20	38273	38273R	282404-1	38270	38270R	282403-1
18-16	38274	38274R	282109-1	38271	38271R	282110-1
16-14	38275	38275R	282465-1	38272	38272R	282466-1



AMPSEAL 16 CONNECTORS

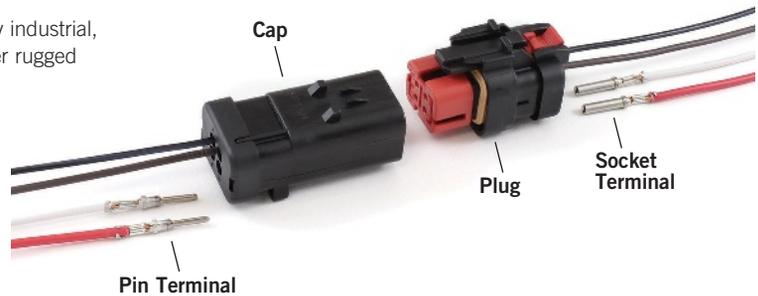
NEW

AMPSEAL 16 Connectors are targeted for off-road, heavy-duty industrial, recreational and agricultural applications. The connectors offer rugged reliability, easy use, and help prevent moisture and dirt from contaminating connections.

- Integrated Primary Latch Reinforcement (PLR) confirms contact alignment and retention
- Wire Gauge Range: 14 - 20 AWG (2.50 - 0.50 mm2)
- PLR Color: Red
- Immersion: IP67



250V
13A



Contacts	Cap Stock No.	TE Connectivity No.	Plug Stock No.	TE Connectivity No.
2	38871	776428-1	38870	776427-1
3	38873	776430-1	38872	776429-1
4	38875	776488-1	38874	776487-1
6	38877	776434-1	38876	776433-1



Stock No. 38871



Stock No. 38870

Terminals

- Durability: SAE J2030 6.11
- Current rating: Up to 13A
- Contact plating: Nickel



Gauge	Pin Stock No.	TE Connectivity No.	Socket Stock No.	TE Connectivity No.
18-20	38879	1924579-3	38881	1924580-2
14-18	38878	776300-2	38880	776299-2

Crimper
Stock No. 663

- Tool frame holds a die assembly with two crimping chambers
- Ratcheting and crimp height adjustment feature



XRC™ CONNECTORS | Deutsch HDP compatible

- Extra rugged circular connectors from Molex
- Sealed for protection against dust and water
- Offered in two shell sizes: 18 and 24
- Available in 14 or 31 circuits
- Standard and reverse terminal genders allow for custom polarization
- IP67 rated
- Interchangeable with Deutsch HDP Connectors
- Collar allows for easy gripping

Application

- In-line or panel-mount applications
- Needs hex nut and panel mount seal (sold separately)



Plug Body
Stock No. 38476

Receptacle Body
Stock No. 38486



257°F (125°C)
-40°F (-40°C)

13A

Connector Bodies

Circuits	Shell Size	Plug Stock No.	Molex No.	Deutsch Cross Reference No.		Terminal Required	Receptacle Stock No.	Molex No.	Deutsch Cross Reference No.		Terminal Required
				Normal Seal	Extra Thin Seal				Normal Seal	Extra Thin Seal	
14	18	38475*	84501-0001	HDP26-18-14PN-L017	HDP26-18-14PE-L017	Pin	38485*	84508-0001	HDP24-18-14SN-L017	HDP24-18-14SE-L017	Socket
14	18	38476*	84507-0012	HDP26-18-14SN-L017	HDP26-18-14SE-L017	Socket	38486*	84502-0008	HDP24-18-14PN-L017	HDP24-18-14PE-L017	Pin

* With collar

Circuits	Shell Size	Plug Stock No.	Molex No.	Deutsch Cross Reference No.		Terminal Required	Receptacle Stock No.	Molex No.	Deutsch Cross Reference No.		Terminal Required
				Thin Seal	Extra Thin Seal				Thin Seal	Extra Thin Seal	
31	24	38478	84510-0004	HDP26-24-31ST	HDP26-24-31SE	Socket	38488	84511-0004	HDP24-24-31PT	HDP24-24-31PE	Pin
31	24	38479**	84505-0003	HDP26-24-31PT-L017	HDP26-24-31PE-L017	Pin	38489**	84506-0003	HDP24-24-31ST-L017	HDP24-24-31SE-L017	Socket
31	24	38480**	84510-0005	HDP26-24-31ST-L017	HDP26-24-31SE-L017	Socket	38490**	84511-0005	HDP24-24-31PT-L017	HDP24-24-31PE-L017	Pin

** With collar and compatible with backshell

Pin Terminals

Wire Ga	Stock No.	Reel Stock No.	Molex No.	Deutsch Cross Reference No.	Insulation O.D. (mm)	Tool Required Stock No.
18-14	31106	31106R	84524-0012	1060-14-0122	(2.41-3.81)	607
18-14	31114	31114R	84590-0008	1060-16-0122	(1.93-3.30)	606
18-16	31119	31119R	84524-0004	1060-16-0622	(1.40-2.16)	608

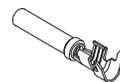
Pin Terminal



Socket Terminals

Wire Ga	Stock No.	Reel Stock No.	Molex No.	Deutsch Cross Reference No.	Tool Required Stock No.
18-14	31107	31107R	84525-0025	1062-14-0122	607
18-14	31115	31115R	84525-0017	1062-16-0122	606
18-16	31118	31118R	84525-0009	1062-16-0622	608

Socket Terminal



Crimp Tool

Tool Stock No.	Terminals
606	Crimps 31114 and 31115
607	Crimps 31106 and 31107
608	Crimps 31119 and 31118

Sealing Plug

Stock No. 38491
(Deutsch No. 114017)
• Size 16-12



Backshell

Stock No. 38494
(Molex No. 84537-0003)
• For 24 shell size housing with collar
• Unique notches on the collar increase strain relief and protection

Deutsch Contact Removal Tool

Compatible with:

- Delphi HES Connectors
- Molex XRC Connectors
- Molex ML-XT
- Amphenol AHD Connectors
- Deutsch HDP Connectors

Stock No.	Contact Size	Wire Ga	Color
631	12	14-12	Yellow
632	16	18-16	Blue
633	20	24-20	Red



Stock No. 632



Extraction Tool

Stock No. 609
• For 18-16 ga wire

HRC Sealed 14 Circuit Plug & Receptacle Kit
Stock No. 38495

- 100 pieces

See www.waytekwire.com for contents



PANEL MOUNT APPLICATION

Panel Mount Hex Nut

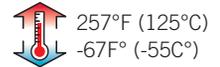
Stock No. 38492
• 18 shell size
Stock No. 38493
• 24 shell size



Panel Mount Seal

Stock No. 38481
• 18 shell size
Stock No. 38482
• 24 shell size



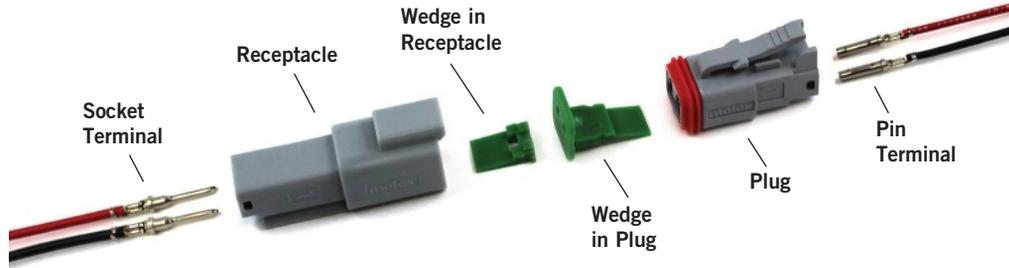


MOLEX ML-XT SERIES | Deutsch DT compatible

ML-XT connectors are a high performance, cost-competitive connector system created with increased seal reliability. The two-shot LSR (liquid silicone rubber) molding and recessed rear seals eliminate the seal-bonding issues and combine to lock out contaminants that can threaten the operation of your system.

- Industry standards: SAE J2030 - fluid submersion IP68 & IP69K - high pressure spray UL listed
- One piece seal on plug

- Plug and receptacle housings are supplied -with internal HCR rear seals locked-in by rear cover



CONNECTORS

Connector Bodies

Description	Plugs		Receptacles	
	Stock No.	Molex No.	Stock No.	Molex No.
2 - Circuit	38420	93445-1202	38421	93444-1202
3 - Circuit	38422	93445-2202	38423	93444-2202
4 - Circuit	38424	93445-3202	38425	93444-3202
6 - Circuit	38426	93445-4202	38427	93444-4202
8 - Circuit	38428	93445-5212	38429	93444-5212
12 - Circuit	38430	93445-6212	38431	93444-6212



Stock No. 38426



Stock No. 38427

Wedges

Description	Plug Wedges		Receptacle Wedges	
	Stock No.	Molex No.	Stock No.	Molex No.
2 - Circuit	38434	93448-1003	38435	93447-1003
3 - Circuit	38436	93448-2003	38437	93447-2003
4 - Circuit	38438	93448-3003	38439	93447-3003
6 - Circuit	38440	93448-4003	38441	93447-4003
8 - Circuit	38442	93448-5003	38443	93447-5003
12 - Circuit	38444	93448-6003	38445	93447-6003



Stock No. 38436



Stock No. 38437

Sealing Plug
Stock No. 38449



- Deutch cross reference see page 50

Terminals

Wire Ga	For Plugs			For Receptacles			Insulation O.D. (mm)
	Stock No.	Reel Stock No.	Molex No.	Stock No.	Reel Stock No.	Molex No.	
18-14	31107	31107R	84525-0025	31106	31106R	84524-0012	(2.41-3.81)
18-14	31115	31115R	84525-0017	31114	31114R	84524-0008	(1.93-3.30)
18-16	31118	31118R	84525-0009	31119	31119R	84524-0004	(1.40-2.16)



Typical Socket Terminal



Typical Pin Terminal

Extraction Tool

Stock No. 639



Crimp Tools

Stock No.	Terminals
606	Crimps 31114 and 31115
607	Crimps 31106 and 31107
608	Crimps 31119 and 31118



Contact Removal Tools

Stock No.	Contact Size	Wire Ga	Color
631	12	14-12	Yellow
632	16	18-16	Blue



2.5 MM MIZU-P25 MINI WATERPROOF CONNECTORS

- 2.50 mm pitch
- Waterproof protection
- Integral housing seal
- 3A per circuit
- 94V-0 flammability rating
- User friendly friction locks save space
- Polarizing ribs prevent incorrect terminal insertion
- Secure connection and latch protection
- Provides high pressure and small deflection for high vibration applications
- Ideal for mirror motor harnesses, switches and wipers
- IP67 rated



Plug Housing for Male Terminals
Stock No. 38682



Receptacle Housing for Female Terminals
Stock No. 38683

Connector Bodies

Circuits	Wire Ga	Plug Housing for Male Terminals		Receptacle Housing for Female Terminals	
		Stock No.	Molex No.	Stock No.	Molex No.
2	22-20	38680	52266-0211	38681	52213-0211
3	22-20	38682	52266-0311	38683	52213-0311
4	22-20	38684	52266-0417	38685	52213-0417



Extraction Tool
Stock No. 617
(Molex No. 63813-2700)



Hand Crimp Tool
Stock No. 614
(Molex No. 63811-8600)

Terminals



Wire Ga	Male Terminal		Female Terminal	
	Loose Piece Stock No.	Molex No.	Loose Piece Stock No.	Molex No.
22-20	31110	50147-8100	31111	50148-8100

MINI FIT JR. CONNECTORS

- 4.20 mm pitch
- Designed for high current/high density wire to wire and wire to board applications
- Fully polarized housings prevent mismatching
- Positive locking thumb latch assures connectors are fully mated
- 6/6 nylon housing material
- 94V-2 flammability rating



Receptacle Housings

- Mate with plug housings or headers



Stock No. 38702

Panel Mount Plug Housings

- Mate with receptacle housings



Stock No. 38711

Free Hanging Plug Housings

- Mate with receptacle housings



Stock No. 38722

Circuits	Stock No.	Molex No.
2 dual row	38700	39-01-2020
4 dual row	38701	39-01-2040
6 dual row	38702	39-01-2060
8 dual row	38703	39-01-2080
10 dual row	38704	39-01-2100

Circuits	Stock No.	Molex No.
2 dual row	38710	39-01-2021
4 dual row	38711	39-01-2041
8 dual row	38713	39-01-2081

Circuits	Stock No.	Molex No.
2 dual row	38720	39-01-3023
4 dual row	38721	39-01-3043
6 dual row	38722	39-01-3063

Terminals



Wire Ga	Male Terminal		Female Terminal	
	Loose Piece Stock No.	Molex No.	Loose Piece Stock No.	Molex No.
24-18	31112	39-00-0041	31113	39-00-0039

- Receptacle housings accept female terminals
- Plug housing and headers accept male terminals



Extraction Tool
Stock No. 616
(Molex No. 11-03-0044)



Hand Crimp Tool
Stock No. 615
(Molex No. 63819-0900)

Manufacturers	New Products
3M Amphenol Aptiv (Formerly Delphi) Blue Sea Systems Carling Technologies Cole Hersee-A Littelfuse Brand Data Panel Corp Eaton GEP Power Products Gigavac HellemanTyton Innovative Mitsubishi Molex Products MP Sany Sany TE Connectivity Tesa Tape Thomas & Betts Trombetta	<div style="text-align: center;">  <p>12-10GA PERMA-SEAL HEAT SHRINK RING TERMINAL STUD SIZE 6/16 Item#: 32804 Manufacturer Item: 19164-0064 Manufacturer: MOLEX Avail #: 1000.00 Data Sheet \$0.3467 EACH</p> </div> <div style="text-align: center;">  <p>CIRCULAR RECEPTACLE CONNECTOR 31 CIRCUITS MOLEX 6451-0009 Item#: 38400 Manufacturer Item: 84511-0009 Manufacturer: MOLEX Avail #: 95.00</p> </div>

Visit www.waytekwire.com to see more Molex parts.

MXP120 SEALED CONNECTORS | **NEW**

The high-performance, compact MXP120 Sealed Connection System is designed to perform in harsh environments and can replace common 1.50mm systems in space-constrained safety-restraint, body electronics and powertrain applications.

- Compatible with USCAR interfaces
- Secure mating performance
- Ensures efficient terminal positioning and detection of partial installation of terminals
- Male blade connectors with primary lock reinforcement
- Designed to be used with TE MCON 1.2mm terminals
- IP68 rated



13A

Connector Bodies

Circuits	Male Connector		Female Connector	
	Stock No.	Molex No.	Stock No.	Molex No.
2	38570	34899-2020	38571	34900-2120
3	38572	34899-3020	38573	34900-3120
4	38574	34899-4080	38575	34900-4120
6	38576	34899-6120	38577	34900-6140



Stock No. 38576



Stock No. 38577



Crimper
Stock No. 370
ERGOCRIMP



Crimp Die
Stock No. 373
20-18 ga

Terminals

Wire Ga	Male Terminal			Female Terminal		
	Loose Piece Stock No.	Reel Stock No.	TE Connectivity Part No.	Loose Piece Stock No.	Reel Stock No.	TE Connectivity Part No.
20-18	38585	38585R	2141116-3	38587	38587R	1452668-3



Cable Seals

Stock No.	Wire Ga	Cable dia. (mm)	Color
38586	24-18	(.09-1.4)	Yellow
38588	24-18	(1.92-2.1)	Yellow



Your Toughest Sealed Connection Challenges
Simply Solved ▶

Molex's sealed interconnect systems are ideal for applications that require ruggedized solutions. From heavy-duty equipment on factory floors to non-automotive transportation applications, Molex's sealed connectors offer high-performance and superior reliability in harsh environments.

www.waytekwire.com/molex



ML-XT SUPERIOR PERFORMANCE CONNECTION SYSTEM
IP69K rated and J2030 power-wash test capable



MXP120 COMPACT CONNECTOR SOLUTION
IP68 rated



XRC (EXTRA RUGGED CIRCULAR SYSTEM)
IP67 rated

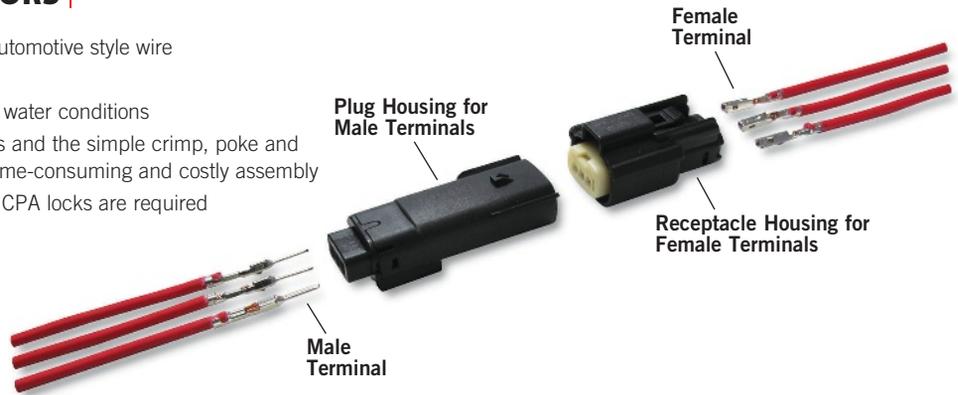


MX150 HIGH RELIABILITY CONNECTION SYSTEM
Tested to IEC IP6K7 and IP6K9K and SAE USCAR-2 Rev 4 standards



MX150 SEALED CONNECTORS

- Designed primarily for thin-walled SAE automotive style wire
- Environmentally sealed
- Superior performance under submersed water conditions
- Terminal position assurance components and the simple crimp, poke and plug application eliminate the need for time-consuming and costly assembly
- No additional wire seals, wedge locks or CPA locks are required
- IP6K7 and IP6K9K rated



Connector Bodies

Contact Layout	Wire Ga	Plug Housing for Male Terminals		Receptacle Housing for Female Terminals	
		Stock No.	Molex No.	Stock No.	Molex No.
1x3	22-14	38400	33481-0301	38401	33471-0301
1x4	22-14	38402	33481-0401	38403	33471-0401
1x6	22-14	38404	33481-0601	38405	33471-0601
2x2	22-14	38446	33482-4001	38419	33472-0401
2x4	22-14	38410	33482-0801	38411	33472-0801
2x6	22-14	38412	33482-1201	38413	33472-1201
2x8	22-14	38432	33482-8601	38415	33472-1601
2x10	22-14	38418	33482-2101	38417	33472-2001

READY TO ORDER:

1. Select connector body style (receptacle or plug) from chart.
2. Select number of terminals needed – one terminal for each contact location.
3. Blank circuit plugs are required for all unused pin locations.
4. MX150 crimping tool must be used to assure a good seal.



Terminals

Wire Ga	Male Terminal			Female Terminal		
	Loose Piece Stock No.	Reel Stock No.*	Molex No.	Loose Piece Stock No.	Reel Stock No.*	Molex No.
22	30094	30094R	33000-1003	30095	30095R	33012-3003
20	30096	30096R	33000-1002	30097	30097R	33012-3002
18	30096	30096R	33000-1002	30097	30097R	33012-3002
16	30096	30096R	33000-1002	31095	31095R	33012-3001
14	31094	31094R	33000-1001	31095	31095R	33012-3001

All terminals are tin-plated copper.
Use with wire that is 1.50 - 2.50 mm O.D.

*Terminals available on reels by Stock No. specified in table above. Special tooling needed for use of reels not available from Waytek.



Blank Circuit Plugs

Stock No.	Molex No.	Package
39021	34345-0001	Each

MX150 Tools



Crimp Tools

- Assures perfect crimp for male and female terminals

Wire Ga	Stock No.	Molex No.
22-18 female terminals	595	63811-6000
16-14 female terminals	596	63811-5900
22-18 male terminals	597	63811-2600
16-14 male terminals	598	63811-2400

**Extraction Tool
Stock No. 488**

(Molex No. 63813-1500)

- Extracts terminals from sealed connector assembly



**Needle Nose Pliers
Stock No. 494**

- Unlocks TPA to release sealed connector assembly



**Molex MX150
Sealed 2 Circuit
Receptacle Kit
Stock No. 38497**

- 38 pieces

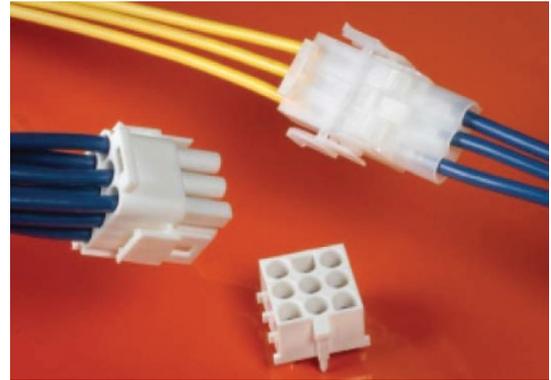
See www.waytekwire.com for contents



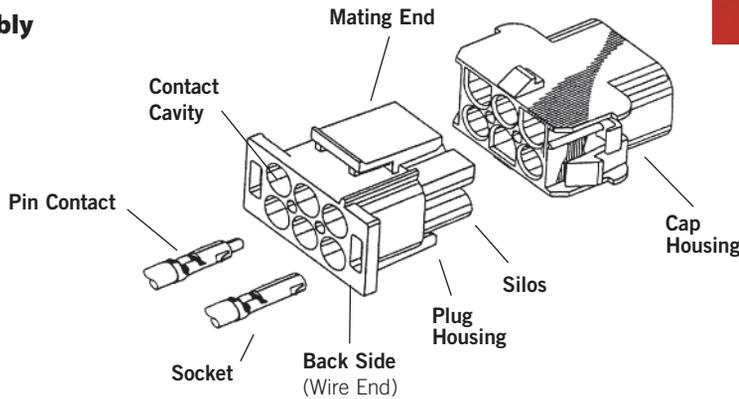
MOLEX MLX 2.13 MM CONNECTORS

- Interchangeable, intermateable and intermountable with industry standard connectors such as Mate-N-Lok®
- Mates with existing wire harnesses, connectors, and printed circuit board (PCB) headers
- Housing material: Nylon 6/6 UL94V-2, natural color
- Pin and socket terminals can be intermixed in the same housing
- Housings will accept any industry compatible terminals

600V
20A



Assembly



Terminals

Wire Ga	Type	Socket		Pin	
		Stock No.	Molex No.	Stock No.	Molex No.
20-14	Socket	31097	02-08-1002		
20-14	Pin	31098	02-08-2004		

NOTES:

Socket and pin terminals are designed for use with Molex crimping tools (Stock No. 539 & 579) and/or industry compatible crimping tools.

Contacts	Current (max)	Plug Housing		Cap Housing	
		Stock No.	Molex No.	Stock No.	Molex No.
1	13.5	38601	50-84-1010	38651	50-84-2010
2	13.5	38602	50-84-1020	38652	50-84-2020
3	13.5	38603	50-84-1030	38653	50-84-2030
4	13.5	38604	50-84-1040	38654	50-84-2040
6	11	38606	50-84-1060	38656	50-84-2060
9	11	38609	50-84-1090	38659	50-84-2090
12	11	38612	50-84-1120	38662	50-84-2120
15	11	38615	50-84-1150	38665	50-84-2150

TOOLING



Molex Crimping Tool
Stock No. 579
(Molex No. 64016-0204)

- Crimps 20-14 ga pin and socket terminals



Economy Crimping Tool
Stock No. 539
(Molex No. 63811-1000)

- Crimps 24-14 ga pin and socket terminals



Extraction Tool
Stock No. 578
(Molex No. 11-01-0168)

- For removing pin or socket terminals from connector bodies



Crimp Tool Frame
Stock No. 560

- Use with die set 558 for complete tool assembly



Die Set for MLX
Stock No. 558

- Crimps 22-14 ga pin and socket terminals

MULTIPOLE POWER® CONNECTORS

- Provides a quick disconnect for power distribution systems
- Housings mate together, with same color connector for plug and receptacle
- Protective connector covers for all sizes are available, as shown
- Available in kits (one housing and two contacts), or assemble your own connector by purchasing two contacts and one housing separately



Red Connector Covers

50 Series **Stock No. 37701**
175 Series **Stock No. 37711**
350 Series **Stock No. 37721**

- Black available on special order basis



Black Connector Cover

120 Series **Stock No. 37704**



Reducing Bushings

- Optional reducing bushings for SB® series connectors assure proper fit when crimping contacts to smaller cable sizes



	Wire Ga	Stock No.	Anderson
SB® 50	From 6 to 8	37791	5912
	From 6 to 12-10	37792	5910
	From 6 to 16-14	37793	5913
SB® 175	From 1/0 to 1	37794	5687
	From 1/0 to 6	37795	5663
SB® 350	From 1/0 to 10	37796	5648
	From 2/0 to 1/0	37797	5918

Series Boots



Marked Source

Marked Load

Series	Marked Load Stock No.	Marked Source Stock No.
50 Series	37713	37714
175 Series	37700	37710

Connectors sold separately

POWERPOLE® CONNECTORS

- Each Powerpole® module is a genderless, single-pole connector
- Can be stacked or blocked in-line using dovetails
- For a complete system, order one contact with each housing
- 15, 30 and 45 amp sizes use the same housings, but different contacts

Housing and Contacts

Amp Rating	Housing Color - Stock No.										Contact		Wire Ga
	Black	Anderson	Red	Anderson	White	Anderson	Green	Anderson	Blue	Anderson	Stock No.	Anderson	
15	37750	1327G6	37752	1327	37759	1327G7	37755	1327G5	---	---	37740	1332	20-16
30	37750	1327G6	37752	1327	37759	1327G7	37755	1327G5	---	---	37741	1331	16-12
45	37750	1327G6	37752	1327	37759	1327G7	37755	1327G5	---	---	37746*	261G2-LPBK	14-10
75	37760	5916G4	37762	5916G7	---	---	---	---	37766	5916	37742	5900	6
120	37770	1321G1	37772	1321G3	---	---	---	---	37776	1321	37744	1319	2
180	37780	1381G1	37782	1381G3	---	---	---	---	37786	1381	37745	1382	1/0

* U barrel open contact. All other contacts are closed.



Crimping Tools

Stock No. 454
15 and 30 amp series
Stock No. 449
45 amp series
Stock No. 455
75 amp series

Powerpole® Housing Plugs

- Can be mounted in a variety of configurations for modular assemblies
- One housing plug comes with a latch to mate with the other housing plug for a locked connection
- Place a spacer key in an empty contact slot and secure assembly with a retaining pin
- For use with Powerpole connectors 15 to 45 amps



Housing Plug – no latch
Stock No. 37787



Housing Plug – latched
Stock No. 37788

Short Spacer Key
Stock No. 37790



Long Spacer Key
Stock No. 37789



Retaining Pin
Stock No. 37739



Cable Clamp & Hardware Pack
Stock No. 37729



SB® 50 Series

	Wire Ga	Stock No.				
		Kit	Housing	Anderson	Contact	Anderson
Red	12-10	37769	37809	992G1	37743	5915
	8	37768	37809	992G1	37737	5952
	6	37767	37809	992G1	37742	5900
Gray	12-10	37709	37808	992	37743	5915
	8	37705	37808	992	37737	5952
	6	37708	37808	992	37742	5900

50 amps maximum, for 6 gauge wire. 17/8" overall length.

SB® 120 Series

	Wire Ga	Stock No.				
		Kit	Housing	Anderson	Contact	Anderson
Red	6	37851	37810	6810G3	37753	1319 G6-BK
	4	37850	37810	6810G3	37748	1319 G4-BK
	2	37852	37810	6810G3	37744	1319-BK
Gray	6	37854	37811	6810G1	37753	1319 G6-BK
	4	37853	37811	6810G1	37748	1319 G4-BK
	2	37855	37811	6810G1	37744	1319-BK
Blue	6	37857	37812	6810G2	37753	1319 G6-BK
	4	37856	37812	6810G2	37748	1319 G4-BK
	2	37858	37812	6810G2	37744	1319-BK

120 amps maximum, 2 1/2" overall length.

SB® 175 Series

	Wire Ga	Stock No.				
		Kit	Housing	Anderson	Contact	Anderson
Red	6	37724	37802	949	37735	1384-BK
	4	37702	37802	949	37749	1384
	2	37732	37802	949	37747	1383
	1/0	37712	37802	949	37745	1382
Gray	6	37725	37807	940	37735	1384-BK
	4	37707	37807	940	37749	1384
	2	37738	37807	940	37747	1383
	1/0	37718	37807	940	37745	1382
Blue	6	37727	37806	941	37735	1384-BK
	4	37706	37806	941	37749	1384
	2	37736	37806	941	37747	1383
	1/0	37716	37806	941	37745	1382

175 amps maximum, 3 1/8" overall length.

SB® 350 Series

	Wire Ga	Stock No.				
		Kit	Housing	Anderson	Contact	Anderson
Red	2/0	37722	37842	913	37822	907
Gray	2/0	37728	37848	906	37822	907
Blue	2/0	37726	37846	912	37822	907

350 amps maximum, for 2/0 gauge wire. 4 1/4" overall length.

600V
High Current Capacity



Stackable

TRAILER CONNECTORS

4-Way

- Metal die-cast design



12-24V
35A

	Stock No.
Socket	37644
Plug	37645
Plug with Cable Guard	37646

E-Line Series

	Stock No.
Socket	35644
Plug	35645

5-Way

- Chrome plated metal housing



12-24V
15A

	Stock No.
Socket	37654
Plug	37655

6-Way

- Metal die-cast design
- Dust and water resistant



12-24V
35A

	Stock No.
Socket	37664
Plug	37665
Plug with Cable Guard	37666
Boot for Socket	37669

E-Line Series

	Stock No.
Socket	35664
Plug	35665

7-Way

- Heavy-duty, metal die-cast design
- Interchangeable with all ATA types



6-28V
40A

	Stock No.
Socket	37674
Plug	37675
Metal Spring for Plug	37678
Rubber Boot for Socket	37679

E-Line Series

	Stock No.
Socket	35674
Plug	35675

7-Way Trailer RV Connector

- Center pins accepts up to 8 ga wire, vinyl inserts keep out dirt and moisture
- Spring-loaded cover with stainless steel spring



	Stock No.
Socket	37686
Plug	37687

7-Way Trailer Plug with Cable Guard & Seal

- Weather Beater plug with cable guard
- Internal moisture resistant seal
- Dielectric grease added for extended reliable service and corrosion protection
- Zinc die-cast



6-28V
40A

Material	Stock No.
Metal	37688
Nylon	37689

7-Way

- Black glass-filled nylon housing corrosion resistant



6-28V
40A

	Stock No.
Socket	37672
Plug	37673
Metal Spring for Plug	37678
Rubber Boot for Socket	37679

E-Line Series

	Stock No.
Socket	35672
Plug	35673
No spring available	

RV 7-Way

- High impact plastic housing
- Works with 7-terminal junction box, Stock No. 47290, on page 187



12-24V
20A-30A Peak

	Stock No.
Socket	37676
Plug	37677

RV Trailer Plug Adapter

- Standard 4-way molded plug end is used for utility or boat trailer connections
- 7-way to 4-way



12-24V
20A-30A Peak

Flat Pins	Stock No.
Plug; 7-Way to 4-Way	37680

Round Pins	Stock No.
Plug; 7-Way to 4-Way	37690

RV 9-Way

- Heavy-duty RV connector
- High impact plastic housing



12-24V
20A-30A Peak

	Stock No.
Socket	37696
Plug	37697

Connector Brackets

- Stock No. 37603 and 37606 fits under trailer tongue, ball or 2 hole frame mount



Stock No.
37601

Stock No.
37606

Stock No.
37602

Stock No.
35601

Bracket For Socket	Silver Stock No.	Black* Stock No.
4-Way #37644	37603	37606
5-Way #37654		
6-Way #37664		
7-Way #37672	37601	----
7-Way #37674		
RV 7-Way #37676	37602	37605
RV 9-Way #37696		

* Features a black epoxy coating to prevent rusting and corrosion

E-Line Series

Brackets For Sockets	Silver Stock No.	Black Stock No.
7-Way #37672	35601	----

HEAVY-DUTY CONNECTORS

- Provides power for auxiliary equipment from the battery
- Ideal for heavy-duty power applications on trucks, ag equipment, utility vehicles, winches, light aircraft ground equipment, construction equipment and more
- Interchangeable with other trailer connector brands



Single Pole	
	Stock No.
Socket	37671
Plug	37670
2 Pole	
	Stock No.
Socket	37661
Plug	37660



12-24V
15A

ISO 7-WAY CONNECTOR PLUG WITH CABLE GUARD

- Meets or exceeds all standards of SAE J560
- Floating pins for ease of alignment and maximum contact
- Accepts widest range of automotive wire gauges from 16-8 ga for ground wire
- High-impact cyclac interior with extended lip for easy removal and replacement
- Solid brass terminal screws
- Polarized ground terminal
- Die-cast material



	Stock No.
Socket	37684
Plug	37685



6-28V
40A

CONNECTORS

- Plastic bodies, PVC caps and split brass contacts
- Available as sets only



4-Way shown

	Stock No.
2-Way	37622
4-Way	37642



12-24V
15A

TRAILER CONNECTORS

- Solid brass contacts are aligned to ensure proper contact and minimal voltage drop
- Wiring codes are embossed on the insulator
- Door/cover is spring-loaded and fits over a mating ridge on the socket face to minimize penetration of dirt and moisture
- Housing is constructed from rugged glass-filled plastic
- Split-pin contacts
- 7-Way used for anti-lock braking systems (ABS)



Socket
Stock No. 37663

Plug
Stock No. 37662

Socket
Stock No. 37650

	Contacts	Stock No.
Socket	7-Way	37650
Plug	13-Way	37662
Socket	13-Way	37663

TRAILER CONNECTOR 7-WAY SPLIT PINS

- Floating pins for ease of alignment and maximum contact
- Ground terminal pin #1 will accept 14-8 ga wire
- All other terminals accept 16-10 ga wire
- Self-grounded to terminal #1
- Recommended mounting hole is 2" diameter
- Die-cast material



	Stock No.
Socket	37668



6-28V
40A

TRAILER ADAPTER KIT

Stock No. 37682

- Kit includes: cable, mounting bracket, fasteners & socket
- 4' harness assembly with 1/2" I.D. convoluted tubing, and 7 wire leads color-coded to RVI standards
- Interlocking connectors seal out moisture, eliminate loose wiring and form weather-tight, non-corrosive assembly



Application

- Exposed under the rear bumper of a sport utility, Ford style pickup truck, other OEM applications

Socket Only

Stock No. 37683

- Mates with **Stock No. 37677** on page 62



7-WAY TRAILER CONNECTOR PLUG

Stock No. 37647

- 6 foot length wire (length includes non-jacketed)
- SAE wiring style



MOLDED CONNECTORS



12V
24V

12 inch loop with both ends

Contacts	Male End GPT 8" Wires Stock No.	Female End GPT 8" Wires Stock No.	Female End GPT 48" Wires Stock No.	Loop GPT 12" Wires Stock No.	Loop GXL 12" Wires Stock No.
1	37119	37129	37109	37009	37139
2	37120	37130	37110	37000	37140
3	37121	37131	37111	37001	37141
4 Flat	37122	37132	37112	37002	37142
4 Square	37153	37163	----	37143	----
5	37154	----	37174	37144	----
6	37155	37165	37175	37145	----

Contacts	Female End	Wire Colors	Male End
1		1. blue	
2		1. brown 2. red	
3		1. green 2. yellow 3. brown	
4 flat		1. green 2. yellow 3. brown 4. white	
4 square		1. green 2. brown 3. yellow 4. white	
5		1. green 2. blue 3. yellow 4. brown 5. white	
6		1. yellow 2. brown 3. white 4. green 5. blue 6. black	



Female End

Male End

- Molded connectors with color coded wires are available in two configurations:
 - Connector molded on one end only
 - Male connector on one end and female connector on the other end
- 16 ga wire
- Contacts are .180" diameter
- GPT wire has a PVC jacket
- GXL wire has a cross linked-polyethylene XLPE jacket, which is resistant to grease, oil, gasoline and most acids



Special configurations and wire types may be available. Call 800-328-2724 for details.

WISHBONE MOLDED CONNECTORS

- 16 ga wire
- Contacts are .180" diameter
- Brown wire wish boned to simplify tail/running light installation

Contacts	Stock No.	Wire/Connectors
4-Way Male	37167	35 Ft. Wishbone harness – 32" Ground
5-Way Male	37137	30 Ft. Wishbone harness – 48" Ground



Stock No. 37167



Stock No. 37137



TOOLS

Strippers	66-67, 71
Crimpers	67-71
Circuit Testers	68
Digital Multimeter	68
Cutters	71



Pressmaster is an innovator and developer of user friendly, ergonomic hand tools for electronic and electrical applications.

For world class quality, and a commitment to excellence, choose Pressmaster.

Pressmaster's ergonomic crimpers are designed to reduced the amount of hand force required to produce a high quality, lasting crimp. With features including high strength construction and a full cycle crimp mechanism, these tools will produce reliable crimping time and time again.

Ergonomic Crimpers (top) :

Precision eccentric adjustments for consistent performance and easy calibration

Proteus Crimpers (bottom) :

Compact design for easy access to wires in confined spaces



Egrocrimp Crimper
Stock No. 654



Proteus Ferrule Wire Crimper
Stock No. 658

For more information visit WAYTEKWIRE.COM/PRESSMASTER

COREX COAXIAL CABLE STRIPPER KITS

- Fastest, most accurate coax stripping system
- Strips coax cables from 0.10" – 0.30" in diameter (RG178 through RG6)
- Removes dielectric, braid, and outside insulation simultaneously
- Includes on color code blade cassette that provides a specific strip dimension
- Choose the blade cassette that provides the strip type and dimensions needed for your connector
- Kit includes stripper, cassettes, hex wrench and instruction sheet

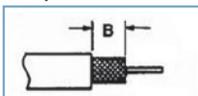
Kit Stock No.	Type	Blade Cassette Color	B Dimension Inches	C Dimension Inches	Replacement Blade Cassette Stock No.
645	2-step	Red	0.24" (6.0 mm)	----	642
646	2-step	Yellow	0.47" (12.0 mm)	----	----
643	2-step	Blue	0.27" (6.8 mm)	----	641
649	3-step	Brown	0.328" (8.3 mm)	0.109" (2.7 mm)	647
650	3-step	Green	0.235" (6.0 mm)	0.235" (6.0 mm)	658
651	3-step	White	0.266" (6.7 mm)	0.063" (1.6 mm)	----

Stripper Kit 2-Step Coaxial Wire

- 2-step coaxial wire stripper cassette kit strips many different size cables
- Includes hex wrench and instruction sheets



2-Step



Replacement Cassettes for 2-Step coaxial wire:

- Cassette determines the strip dimension the stripper will give
- Used with any 2-step full kit
- Can be interchanged in seconds in the tool body

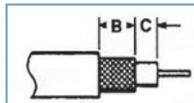


Stripper Kit 3-Step Coaxial Wire

- 3-step coaxial wire stripper cassette kit strips many different size cables
- Includes hex wrench and instruction sheets



3-Step



Replacement Cassettes for 3-Step coaxial wire:

- Cassette determines the strip dimension the stripper will give
- Used in any 3-step full kit or pre-adjusted model
- Can be interchanged in seconds in the tool body



PRESSMASTER CRIMPERS

pressmaster
QUALITY TO HAND

Ergonomic Crimpers

- Unique mechanism significantly reduces hand force requirement over competing crimping tools
- Versatile and easy to customize for right hand or left hand users
- Full cycle crimp mechanism to ensure consistent, reliable crimp
- Ratchet release mechanism to clear miscrimps and obstructions
- Precision eccentric adjustment for consistent performance and ability to calibrate
- Hole in handle allows attachment of safety strap



Stock No.	Description	Crimp
652	Crimps insulated terminals, and splices 22-10 AWG	Oval
653	Crimps non-insulated terminals and lugs, and splices 22-10 AWG	Indent
654	Crimps non-insulated open barrel standard terminal and lugs 22-10 AWG	B-Crimp
655	Crimps insulated terminals, and splices 22-10 AWG	Oval

Ergonomic Plus Mini-Crimpers

- Versatile and easy to customize for right hand or left hand users
- Full cycle crimp mechanism to ensure consistent, reliable crimp
- Ratchet release mechanism to clear miscrimps and obstructions
- Precision eccentric adjustment for consistent performance and ability to calibrate



Stock No.	Description	Crimp
656	Crimps D-stub open barrel standard type, and splices 30-20 AWG	B-Crimp w/ locator
657	Wire ferrules self-adjusting single die nest: 22-10 AWG	Square

Proteus Crimpers

- Lightweight, compact, comfortable and self-adjusting tool for crimping ferrules/wire end sleeves
- Ratchet (with emergency release) to ensure that crimps are completed according to specification, non-slip grip pad for applying pressure against a surface
- Ergonomically shaped handles with selected hardness and surface textures for comfortable frequent use



Stock No.	Description	Crimp
658	Crimps 26-8 ga Wire Ferrules	Square
659	Crimps 28-26 ga Wire Ferrules	Hex

WAYTEK WIRE STRIPPERS

Self-Adjusting Cut and Strip Tool

- Strips wires from 34-8 ga wire (0.02-10 mm) without adjustment
- Replacement cassettes available and quickly changed as needed with ease



Straight Angle
Stock No. 555



Right Angle
Stock No. 570



Stock No. 555B

- Replacement straight blade cassette is for PVC, THHN, THHW
- Self-adjusting cut and strip tool (555 & 570)



Stock No. 555BV

- Replacement "V" blade cassette is for Teflon
- Self-adjusting cut and strip tool (555 & 570)



Stock No. 640B

- Curved drop in blade 10-5 ga
- Self-adjusting cut and strip tool (555 & 570)

Heavy-Duty Cable Stripping Tool

Stock No. 556

- Strips cables of all insulation types
- Features two interchangeable cable guides for a cable capacity of 0.18" up to 1.57" (4.5-40 mm)
- Three blade positions to provide circular, lengthwise or spiral cuts
- Replacement blade contained inside the tool



Stock No. 556B

- Replacement blade for heavy-duty cable stripping tool (556)



Precision Stripping Tool

Stock No 557

- 9-position stripping tool
- Strips jackets of most cables up to 0.43" (11 mm) with insulation thickness up to .04"



Stock No. 557B

- Replacement blade for precision stripping tool (557)



CATV Coaxial Cable Stripper

Stock No. 644

- Provides standard 0.25"/0.25" strip dimensions
- For use with: RG59 & RG6 cables for CATV 'F' Connectors
- Built-in stop (no adjustment needed)



CRIMP TOOL FRAME AND DIES

TOOLS



Master Mobile Crimp Tool Kit
Stock No. 569

- Includes crimp tool frame 560, 7 Die Sets, 561, 562, 563, 564, 565, 566 and 567, plus a high quality carrying case

Build Your Own Customized Crimp Tool Kit!

PARTS SOLD SEPARATELY

- Individual parts are sold separately to suit your specific needs
- Customized kit is much less expensive than multiple individual tools



Tool Frame
Stock No. 560

- Reliable, safe comfortable to use
- Fast and simple exchange of crimp dies
- Dies sold separately



Carry Case
Stock No. 568

- Empty carrying case for 560 tool frame and 8 dies
- Purchase tool frame and dies separately

Crimp Tool Die Sets

Die Set for MLX™



- Stock No. 558**
- 22-14 ga open barrel non-insulated terminals

Die Set for 150 & 280 Metri-Pack



- Stock No. 559**
- 18-10 ga open barrel non-insulated terminals
 - Crimps terminal and seal simultaneously

Die Set for Weather Pack



- Stock No. 564**
- 20-12 ga
 - Crimps terminal and seal simultaneously

Die Sets for Insulated Terminals



- Stock No. 561**
- 26-22 ga and 12-10 ga insulated terminals and splices

- Stock No. 562**
- 22-14 ga insulated terminals and splices

Die Sets for Non-Insulated Terminals



- Stock No. 563**
- 22-10 ga non-insulated terminals, lugs and splices

- Stock No. 567**
- 22-10 ga open barrel non-insulated 1/4 terminals, lugs and splices
 - Crimps terminal and seals simultaneously

Die Sets for Heat Shrink Terminals



- Stock No. 565**
- 22-18 ga and 12-10 ga heat shrink terminals

- Stock No. 566**
- 22-14 ga heat shrink terminals

CIRCUIT TESTERS

	Stock No.	Tests
	505	6-24V AC or DC circuits 36" test leads with alligator clip
	527	For continuity of circuit with power off 36" test leads with alligator clip Uses AAA battery (not included)

DIGITAL MULTIMETERS

	Stock No.	Ranging
	316	Manual ranging 600V

FUSE TESTER

	Stock No.	Tests
	447	24V, continuity tester for fuses in a circuit

DEUTSCH CRIMP TOOL KIT |

NEW

Stock No. 670

A complete 6-piece kit to crimp and release the Deutsch terminals found throughout the industry. Used for vehicles and equipment subject to excessive vibration and wherever an environmentally sealed connection is used.

See www.waytekwire.com for contents



MASTER CRIMP TOOL KIT |

NEW

Stock No. 671

A complete 11-piece kit to crimp and release the most popular automotive specialized terminals including Deutsch/Amphenol, Metri-Pack and Weather Pack. Used for vehicles and equipment subject to excessive vibration and wherever an environmentally sealed connection is used.

See www.waytekwire.com for contents



CRIMPERS FOR AMPHENOL CONNECTOR SERIES |

	Stock No.	Crimps
	613	Deutsch DT compatible connector line Deutsch Stock No. DTT-16-00
	618	12 ga Amphenol AT series Deutsch Stock No. DTT-12-00
 Ratcheting	619	18-14 ga size 16 Amphenol closed barrel terminals
 Ratcheting	634	20-12 ga crimping for Amphenol terminals

	Stock No.	Strips / Crimps
	635	22-20 ga size 20 Amphenol terminals
	636	20-16 ga size 20 Amphenol terminals Deutsch Stock No. DTT-20-00
	637	20-18 ga size 16 Amphenol terminals Deutsch Stock No. DTT-16-01
 Ratcheting	638	12 ga size 12 Amphenol closed barrel terminals

HEAVY-DUTY CRIMPERS

	Stock No.	Crimps
 Ratcheting	535	8-2 ga insulated and non-insulated terminals
 Battery Lug Crimpers Ergonomic cushioned grips - ratcheting	680	1 - 6 ga - open barrel
	681	3/0 & 4/0 - diamond
	682	1/0 - 3/0 - diamond
	683	1 - 8 ga - diamond
	462	Used with a hammer for a quick crimp in maintenance and repair situations Handles terminals from 8 ga-4/0
	461	Crimps battery lugs from 8ga-4/0
	460	Crimps battery lugs from 8ga-1/0
	470	Bench mountable version of Stock No. 460 Crimps battery lugs from 8ga-4/0
	521	Replacement Die Tool Kit for Stock No. 460 & 470 4 dies, spring and pin

RACHETING CRIMPERS

	Stock No.	Crimps
 Ratcheting	405	22-10 ga insulated terminals Ideal for nylon insulated terminals with extra sleeve Double crimps both barrel and insulation grip
 Ratcheting	434	22-10 ga insulated and non-insulated terminals
 Ratcheting	513	22-10 ga insulated terminals Meet or exceed MIL-SPEC pull-out tests
 Ratcheting	584	22-10 ga insulated terminals

ECONOMICAL CRIMPERS

	Stock No.	Crimps
 All-In-One Crimper-Cutter-Stripper	466	22-10 ga insulated and non-insulated terminals
 Crimper-Cutter-Stripper	403	22-10 ga insulated and non-insulated terminals, and 7-8 mm ignition parts
 Crimper-Cutter-Stripper	404	Strips 22-10 ga wire Crimps 22-6 ga insulated and non-insulated terminals and bare flag terminals
 Plier Type Crimper/Wire Cutter	456	22-10 ga non-insulated terminals
 Plier Type Crimper/Wire Cutter	457	22-10 ga insulated and non-insulated terminals
 Ratcheting Crimper-Cutter-Stripper	458	22-10 ga insulated and non-insulated terminals
 Crimps 7-8 mm insulated and non-insulated terminals, lugs & splices Cuts and strips 22-8 ga solid and 26-10 ga stranded wire	506	
 Journeyman™	522	22-10 ga insulated and non-insulated solderless terminals
 Ratcheting	491	26-14 ga insulated terminals

SPECIALTY CRIMPERS

	Stock No.	Crimps
 Ratcheting, Fully Insulated Flag Crimper	495	Crimps Stock No. 30535 & 31535
 Non-insulated flag terminals, open and closed barrel terminals 22-10 ga	428	
 24-14 ga U-Barrel terminals	419	

HEAT SHRINK CRIMPERS

	Stock No.	Crimps
 Ratcheting	479	Crimps Molex PermaSeal Connectors 22-10 ga
 Ratcheting	480	Crimps Molex PermaSeal Connectors 22-10 ga includes removable die

CUTTERS - continued

	Stock No.	Cuts
 KLEIN TOOLS J213-9NE	529	High leverage side cutting design
 KLEIN TOOLS	528	Midget diagonal cutting pliers 4.5" long, ideal for close quarters and small cuts

CUTTERS

	Stock No.	Cuts
 Battery Cable Cutter	437	Battery cable up to 2/0 ga
 KLEIN TOOLS 63020	526	Anvil cutter for up to 12 ga solid and stranded copper wire Curved cutter for up to 8 ga solid and stranded copper wire
 Economy Cable Cutter	469	Copper and aluminum cable up to 1 ga
 KLEIN TOOLS D228-8	498	Diagonal cutting pliers
 Heavy-Duty Cutter	438	Up to 250cm copper cable Removable blades can be sharpened
 KLEIN TOOLS J63050	517	Up to 4/0 aluminum, 2/0 soft copper cable and 100-pair 24 ga communications cable
 KLEIN TOOLS J248-8	514	High leverage diagonal cutting, design for confined spaces
 IDEAL 45-123 Wire Cutter	465	Cuts up to 1/2" stranded wire

WIRE STRIPPERS

	Stock No.	Strips / Crimps
 IDEAL 45-092	444	22-8 ga wire
 ECLIPSE	399	20-10 ga wire
 KLEIN TOOLS 11055 Klein-Kurve™	519	Strips and cuts 18-10 ga solid wire 20-12 ga stranded wire
 IDEAL 45-418	448	16-8 ga stranded wire
 Economy Cable Stripper	436	Up to 4/0 cable
 ECLIPSE Stripper-Crimper-Cutter	430	Strips 26-10 ga wire Crimps 22-10 ga terminals
 ECLIPSE Heavy-Duty Stripper-Crimper-Cutter	439	Strips 26-10 ga wire Crimps 22-10 ga insulated terminals and 22-4 ga non-insulated terminals

USING HEATSHRINK TUBING



Retrieved from www.techflex.com/tips/2

WHAT IS HEATSHRINK TUBING?

Heatshrink tubing is a flexible, pre-stretched tube, engineered from a wide range of polymers, that will shrink to a fixed diameter when sufficient heat is applied. Its diameter and thickness can vary, and it is rated by its expansion ratio, a comparative of the differences in expansion and recovery rate.

Heatshrink tubing is the ideal way to create a tight, professional finish on any wire, hose or cable management project. Once shrunk, the tubing will hold its reduced state, even in elevated temperatures. Typical applications for the heatshrink tubing include: electrical insulation, termination, splicing, cable bundling, color coding, strain relief, wire marking, identification, mechanical protection, corrosion protection, abrasion protection and moisture and weather sealing.

WHAT DOES SHRINK RATIO (2:1, 3:1, ETC.) MEAN?

The shrink ratio is the approximate maximum amount that heatshrink tubing will shrink relative to the unshrunk diameter. For example, a piece of 3/4" heatshrink tubing with a 3:1 shrink ratio will shrink down to a maximum diameter of approximately 1/4" when fully shrunk. All heatshrink tubing on our site is specified in its *UNSHRUNK* diameter, so consider the shrink ratio and the unshrunk diameter when ordering heatshrink tubing. Heatshrink tubing with a larger shrink ratio will be more forgiving when fitting the tubing over plugs or connectors, but will have a bit larger wall thickness and slightly less flexibility when shrunk than a lower ratio product.

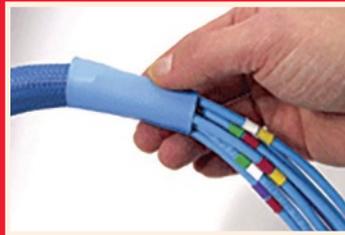
INSTALLING HEATSHRINK TUBING



1. MEASURING YOUR TUBING

Measure the heatshrink tubing to length and cut with a scissor. The thickness of your bundle, as well as the desired final appearance, will determine the length of the tubing you cut.

Generally, a piece 1 1/2" - 2" long will accommodate almost any need (such as this bundle of 10 CAT-5 network cables). Single wires or smaller bundles will require shorter pieces.



2. POSITIONING THE TUBING

Slip the tubing over the bundle and position it so that both the sleeved and unsleeved portions are sufficiently covered.

Notice the small pieces of tubing installed on single wires as part of a color coding system. If your project requires multiple operations, always work up from the smallest to the largest bundle.



3. FINISHING THE INSTALLATION

Gently apply heat from a heat gun or torch with an appropriate diffusion attachment. Keep the heat source far enough away so that hot metal or direct flame don't come in contact with the tubing, wires or sleeving. Move the heat around the bundle to prevent damaging the sleeving and to ensure that all areas of the tubing have been shrunk to their limits. Be patient and work slowly. Once cooled, your installation is complete.

WIRE COVERINGS & PROTECTION

2:1 Shrink Ratio Heat Shrink	74, 76-78	Aluminum Reflective Sleeving	83
3:1 Shrink Ratio Heat Shrink	75-77	Self Closing Braided Sleeving	83
4:1 Shrink Ratio Heat Shrink	75, 77	Expandable Sleeving	84
Heavy-Duty Heat Shrink	76-77	Braided Split Sleeving	85
Shrinkable Fabric Tubing	77	Fiberglass Sleeving	85
Microtorches & Heat Guns	79	Metal Braided Sleeving	85
Corrugated Loom	80	Heavy-Duty Dura-Flex Sleeving	85
Loom Fittings	81	Strain Reliefs	86
Electrical Tubing	82	Cord Grips	86
Liquid Tight Conduit	82	Hole Plugs	87
Spiral Wrap Tubing	83	Rubber Grommets	87
Vinyl Tubing	83	Snap Bushings	87



POLYOLEFIN CPX 100 HEAT SHRINK (2:1 SHRINK RATIO) |

48 Inch Lengths  DSG-CANUSA
A SHAWCOR COMPANY

Stock No.				Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
Black	Red	Clear	White				
22101	22151	22301	22351	1/16	.063	.031	.017
22102	22152	22302	22352	1/8	.125	.062	.020
22103	22153	22303	22353	3/16	.187	.093	.020
22104	22154	22304	22354	1/4	.250	.125	.025
22106	22156	22306	22356	3/8	.375	.187	.025
22108	22158	22308	22358	1/2	.500	.250	.025
22112	22162	22312	22362	3/4	.750	.375	.030
22116	22166	22316	22366	1	1.000	.500	.035
22124	22174	22324	----	1 1/2	1.500	.750	.040
22132	22182	----	----	2	2.000	1.000	.045

Spools - Black  DSG-CANUSA
A SHAWCOR COMPANY

Stock No.	Spool Size Ft.	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22430C	100				
22430M	1000	1/16	.063	.031	.017
22431C	100				
22431M	1000	1/8	.125	.062	.020
22433C	100				
22433M	1000	3/16	.187	.093	.020
22434C	100				
22434H	500	1/4	.250	.125	.025
22436C	100				
22436L	200	3/8	.375	.187	.025
22438C	100				
22438L	200	1/2	.500	.250	.025
22442C	100				
22446C	100	1	1.000	.500	.035

6 Inch Lengths - Black

Stock No.	Pieces per Bag	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22271	40	1/16	.063	.031	.017
22273	34	1/8	.125	.062	.020
22274	30	3/16	.187	.093	.020
22275	24	1/4	.250	.125	.025
22276	20	3/8	.375	.187	.025
22277	18	1/2	.500	.250	.025
22278	12	3/4	.750	.375	.030
22279	8	1	1.000	.500	.035

1 1/4 Inch Lengths - Black

Stock No. 100 Bag	Stock No. 1000 Bag	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22503	22523	3/16	.187	.093	.020
22504	22524	1/4	.250	.125	.025
22505	22525	3/8	.375	.187	.025
22506	22526	1/2	.500	.250	.025

READY TO ORDER:

1. Order the 48" lengths by the number of pieces.
2. Order the spools by the number of feet.
3. Order the 6 inch and 1 1/4 inch lengths by the number of bags.

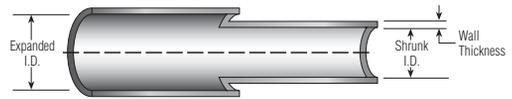
All shipments are subject to dimensional weight charges.



Notes:

To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All dimensions in inches.



- Shrinks to 1/2 the original size
- Flame retardant
- Colors black, red and white material only meet MIL-1-23053/5 Class 1 specs
- Clear material meets MIL-1-23053/5 Class 2 specs



275°F (135°C)
-67°F (-55°C)

SHRINK TEMPERATURE:
194°F (90°C)



White



Red



Clear



Black

Number of Pieces	Size
2	1/16
2	3/32
4	1/8
8	3/16
8	1/4
6	3/8
4	1/2
2	3/4
1	1

All dimensions in inches.

Polyolefin Assortment Pack Black 6 in. Lengths Stock No. 22290

- Shrinks to 1/2 original size
- Ideal for prototype work or where a variety of sizes is needed



Polyolefin Heat Shrink Kit Black 6 in. Lengths Kit Stock No. 22288

- Shrinks to 1/2 original size
- Ideal for prototype work or where a variety of sizes is needed
- Refill kit with assortment pack Stock No. 22290 or bags of 6" pieces shown above

Number of Pieces	Size
36	3/16
24	1/4
12	3/8
6	1/2
4	3/4
4	1

All dimensions in inches.



Compartment case included

Custom Cut Heat Shrink

All sizes and styles of heat shrink tubing can be cut to your length requirements.



Call the 800-328-2724 for details.



POLYOLEFIN CPA 100 DUAL WALL (3:1 Shrink Ratio)

- Accommodates a variety of shapes and contours
- Internal meltable sealant physically encapsulates connections
- Flame retardant

Application

- Marine, automobile and telecommunications

Internal adhesive melts when shrunk. Shrinks to 1/3 the original size.

 230°F (110°C) SHRINK TEMPERATURE:
-67°F (-55°C) 248°F (120°C)



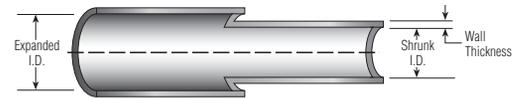
Available on spools

Polyolefin Dual Wall Assortment Pack Black 6 in. Lengths Stock No. 22260

- Ideal for prototype work, or where a variety of sizes are needed
- Shrinks to 1/3 the original size

Number of Pieces	Size
2	1/8
4	3/16
6	1/4
4	3/8
2	1/2
1	3/4
1	1

All dimensions in inches.



48 Inch Lengths

Black Stock No.	Red Stock No.	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22202	22452	1/8	.125	.042	.039
22203	22453	3/16	.187	.062	.043
22204	22454	1/4	.250	.083	.047
22206	22456	3/8	.375	.125	.055
22208	22458	1/2	.500	.167	.055
22212	22462	3/4	.750	.250	.067
22216	22466	1	1.000	.333	.074
22220	----	1 1/4	1.250	.416	.100
22224	----	1 1/2	1.500	.500	.120

Spools

Black Stock No.	Red Stock No.	Spool Size Ft.	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22202M	22452M	1000	1/8	.125	.042	.039
22203M	22453M	1000	3/16	.187	.062	.043
22204H	22454H	500	1/4	.250	.083	.047
22206L	22456L	200	3/8	.375	.125	.055
22208L	22458L	200	1/2	.500	.167	.055
22212C	22462C	100	3/4	.750	.250	.067
22216C	----	100	1	1.000	.333	.074

6 Inch Lengths - Black

Stock No.	Pieces Per bag	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22251	14	1/8	.125	.042	.039
22252	12	3/16	.187	.062	.043
22253	10	1/4	.250	.083	.047
22254	9	3/8	.375	.125	.055
22255	8	1/2	.500	.167	.055
22256	4	3/4	.750	.250	.067
22257	3	1	1.000	.333	.074

1 1/4 Inch Lengths - Black

Stock No. 100 bag	Stock No. 1000 bag	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22542	22562	3/16	.187	.062	.043
22543	22563	1/4	.250	.083	.047
22544	22564	3/8	.375	.125	.055
22545	22565	1/2	.500	.167	.055

READY TO ORDER:

1. Order the 48" lengths by the number of pieces.
2. Order the 6 inch and 1 1/4 inch lengths by the number of bags.

All shipments are subject to dimensional weight charges.

Notes:

- To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All dimensions in inches.

POLYOLEFIN ADHESIVE LINED CROSS-LINKED (4:1 SHRINK RATIO)

- Shrinks to 1/4 the original size
- Seals and protects against water, moisture and chemicals
- Internal meltable sealant protects the connections
- Approved to all major automotive OEM splice sealing applications

 257°F (125°C) SHRINK TEMPERATURE:
-40°F (-40°C) 257°F (125°C)



Black



Clear



Available on spools

48 Inch Lengths

Stock No. Black	Stock No. Clear	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22225	22385	1/4	.236	.055	.053
22226	22386	5/16	.315	.063	.069
22227	22387	1/2	.472	.098	.079
22228	22388	3/4	.708	.146	.102

Clear Spools

Stock No.	Spool Size Ft.	Nominal Size	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22385H	500	1/4	.236	.055	.053
22386S	300	5/16	.315	.063	.069
22387L	200	1/2	.472	.098	.079
22388C	100	3/4	.708	.146	.102

Notes:

- To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All shipments are subject to dimensional weight charges.

All dimensions in inches.

3M™ ADHESIVE-LINED POLYOLEFIN EPS-300 HEAT SHRINK (3:1 Shrink Ratio)

48 Inch Lengths

Black Stock No.	Red Stock No.	Nominal I.D.	Expanded I.D.	Shrunk I.D.	Recovered Wall Thickness (Nominal)
22012	----	1/8	.125	.040	.040
22013	----	3/16	.187	.062	.040
22014	22019	1/4	.250	.080	.040
22015	22032	3/8	.375	.120	.055
22016	22034	1/2	.500	.160	.070
22017	22036	3/4	.750	.250	.085
22018	22046	1	1.000	.320	.100

READY TO ORDER:

Order by the number of pieces.
All shipments are subject to dimensional weight charges – see terms and conditions



Notes:

To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All dimensions in inches.

- Thin-wall, flexible tubing offers the advantage of integral adhesive lined construction
- Heat-shrinkable outer wall is selectively cross-linked, while maintaining the high flow and excellent adhesion of the inner sealant liner
- MIL-DTL-23053/4, Class 3
- Flame retardant



Stock No. 22012



230°F (110°C) SHRINK TEMPERATURE:
-67°F (-55°C) 250°F (121°C)

3M™ EXTRA HEAVY-DUTY POLYOLEFIN HEAT SHRINK HDT (3:1 Shrink Ratio)

48 Inch Lengths

Black Stock No.	Red Stock No.	Nominal I.D.	Expanded I.D.	Shrunk I.D.	Recovered Outer Wall Thickness (Nominal)
22039	22040	1/2	.400	.150	.090
22041	22042	3/4	.800	.200	.110
22043	22044	1	1.100	.370	.120

READY TO ORDER:

Order by the number of pieces.
All shipments are subject to dimensional weight charges – see terms and conditions



Notes:

To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All dimensions in inches.

- Meets SAE-AMS-DTL-23053/15, Class 1 ABS
- Cross-linked polyolefin
- Flame retardant
- Chemical, abrasion and split resistant
- Easy handling and installation with maximum operating reliability and system protection
- Sealant is heat-activated thermoplastic material that remains soft and flexible over long periods under adverse environmental conditions
- During heating, sealant softens, bonds to underlying surfaces and fills small voids that might be present

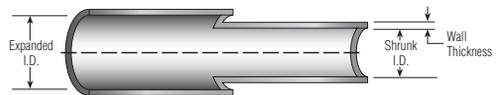


Stock No. 22040



230°F (110°C) SHRINK TEMPERATURE:
-67°F (-55°C) 250°F (121°C)

PVC CVN HEAT SHRINK (2:1 Shrink Ratio)



Black Stock No.	Clear Stock No.	Spool size Ft.	Nominal I.D.	Expanded I.D.	Shrunk I.D.	Recovered Wall thk.
22000M	----	1000	1/8	.125	.062	.020
22001M	----	1000	3/16	.187	.093	.020
22002M	22022M	1000	1/4	.250	.125	.025
22003H	----	500	3/8	.375	.187	.025
22004F	22024F	250	1/2	.500	.250	.025
22007F	----	250	5/8	.625	.313	.025
22005F	----	250	3/4	.750	.375	.030
22008F	----	250	1	1.000	.500	.035
22010C	----	100	1 1/2	1.500	.750	.040

All shipments are subject to dimensional weight charges.



To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All dimensions in inches.

- Shrinks to 1/2 the original size
- Very flexible and forms a smooth, tight insulation
- Resistant to oils, chemicals and fungus
- Highly Flame Retardant
- Store in cool location out of direct sunlight



221°F (105°C) SHRINK TEMPERATURE:
-22°F (-30°C) 230°F (110°C)



EXTRA HEAVY-DUTY CFW HEAT SHRINK (3:1 Shrink Ratio)

- Dual wall
- Shrinks to 1/3 the original size
- Thick adhesive inner wall protects against moisture and contamination
- Submersible and direct burial



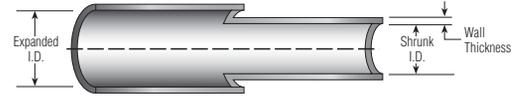
230°F (110°C)
-67°F (-55°C)

SHRINK TEMPERATURE:
248°F (120°C)



Heavy-Duty heat shrink applied to crimpable lug

Available in 12" lengths and 48" lengths



Stock No. for 12" Lengths	Stock No. for 48" Lengths	Color	Size Diameter	Approx. Min. Expanded I.D. inch.	Approx. Maximum Recovered	Approx. Typical wall Thickness
22230	22240	black	1/2	.500	.150	.080
22231	22241	red	1/2	.500	.150	.080
22232	22242	black	3/4	.750	.250	.120
22233	22243	red	3/4	.750	.250	.120
22234	22244	black	1.1	1.100	.350	.120
22235	22245	red	1.1	1.100	.350	.120
22236	22246	black	1 1/2	1.500	.470	.140
22237*	22247*	red	1 1/2	1.500	.470	.140

Notes:

All shipments are subject to dimensional weight charges.

* These items are flame retardant

To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All dimensions in inches.

Extra Heavy-Duty Heat Shrink Kit

Stock No. 22299

Plastic container with 6" lengths of:

- 10 black and 10 red .400 dia.
- 5 black and 5 red .750 dia.
- 2 black and 2 red 1.10 dia
- Shrinks to 1/3 the original size



Refill Packages			
Stock No.	Nominal Size	Pieces per bag	Color
22293	.400	10	Black
22294	.400	10	Red
22295	.750	5	Black
22296	.750	5	Red
22297	1.100	2	Black
22298	1.100	2	Red

All dimensions in inches.

3M™ SMS COLOR CODED HEAT SHRINK (4:1 Shrink Ratio)

48 Inch Lengths

Stock No.	Nominal Size	Expanded I.D.	Recovered I.D.	Recovered Wall Thickness	Color Coded
22050	5/16	.350	.080	.038	Green
22051	1/2	.450	.105	.043	Red
22052	3/4	.700	.175	.060	Orange

- Shrinks to 1/4 the original size
- Color coded for easy size identification
- Semi-rigid polyolefin
- Provides excellent strain relief
- Functional over wide temperature range
- Puncture resistant
- Resistant to salt water, automotive fluids and corrosive chemicals
- Fire retardant



230°F (110°C)
-67°F (-55°C)

SHRINK TEMPERATURE
249°F (121°C)



HEAT SHRINKABLE FABRIC TUBING (2:1 Shrink Ratio)

- Shrinks to 1/2 the original size
- Flexible woven polyester and polyolefin fabric
- Abrasion resistant

Application

- Ideal for covering rubber hoses, harnesses and plastic pipes



257°F (125°C) SHRINK TEMPERATURE:
-40°F (-40°C) 275°F (135°C)

Stock No.	Minimum Expanded I.D.	Maximum Recovered I.D.	Spool Size (ft.)
22490	0.472	0.236	100
22491	0.787	0.394	100
22492	1.181	0.591	100
22493	1.575	0.787	100

All dimensions in inches.

3M™ FP-301 HEAT SHRINK (2:1 SHRINK RATIO)

48 Inch Lengths

Black Stock No.	Red Stock No.	Nominal Size	Expanded I.D.	Recovered I.D.	Recovered Wall Thickness
20233	20246	1/16	.063	.031	.017
20237	20247	1/8	.125	.062	.020
20238	20248	3/16	.187	.093	.020
20239	20249	1/4	.250	.125	.025
20240	20250	3/8	.375	.187	.025
20241	20251	1/2	.500	.250	.025
20242	20252	3/4	.750	.375	.030
20243	20253	1	1.000	.500	.035
20244	20254	1-1/2	1.500	.750	.040
20245	20255	2	2.000	1.000	.045



275°F (135°C)
-67°F (-55°C)

SHRINK TEMPERATURE
212°F (100°C)



Black FP-301 available on spools

Spools - Black

Black Stock No.	Nominal Size.	Spool Size	Expanded I.D.	Recovered I.D.	Recovered Wall Thickness
20256C	1/16	100	.063	.031	.017
20256M	1/16	1000	.063	.031	.017
20258C	1/8	100	.125	.062	.020
20258H	1/8	500	.125	.062	.020
20260C	3/16	100	.187	.093	.020
20260F	3/16	250	.187	.093	.020
20262C	1/4	100	.250	.125	.025
20262L	1/4	200	.250	.125	.025
20265C	3/8	100	.375	.187	.025
20265L	3/8	200	.375	.187	.025
20266C	1/2	100	.500	.250	.025
20266L	1/2	200	.500	.250	.025
20268K	3/4	50	.750	.375	.030
20268L	3/4	200	.750	.375	.030
20270K	1	50	1.000	.500	.035
20270C	1	100	1.000	.500	.035
20272C	2	100	2.000	1.000	.045

6 Inch Lengths - Black

Black Stock No.	Nominal Size	Expanded I.D.	Recovered I.D.	Recovered Wall Thickness
20273	1/16	.063	.031	.017
20274	1/8	.125	.062	.020
20275	3/16	.187	.093	.020
20276	1/4	.250	.125	.025
20277	3/8	.375	.187	.025
20278	1/2	.500	.250	.025
20279	3/4	.750	.375	.030

READY TO ORDER:

- Order the 6" and 48" lengths by the number of pieces.
- Order the spools by the number of feet.

All shipments are subject to dimensional weight charges.



Notes:

To measure I.D., open heat shrink to its rounded state and then measure the inside diameter (do not measure while flat to get I.D.).

All dimensions in inches.

- Outstanding balance of electrical, physical and chemical properties for a variety of industrial and military applications
- Shrinks to 1/2 the original size
- Split-resistant
- Mechanically tough
- Easily marked and resists cold flow
- Designed to withstand elevated temperatures to 572°F (300°C) for short periods
- SAE-AMS-DTL-23053/5, Class 1 Class 2

Application

- Use over cable splices and terminations



MICROTORCHES AND HEAT GUNS

Hand Held Butane-Powered Microtorch



2500°F (1300°C)
Maximum

Stock No. 536

- 2-hour continuous burn time
- Built-in refillable plastic fuel tank
- Includes hot air tip and 1" dia. heat shrink attachment
- 6.1"H x 3"W x 1.3"D
- Butane not available - shipped dry



Mini-Trigger Microtorch



2500°F (1300°C)
Maximum

Stock No. 541

- Removable base for table-top or hand-held use
- "Hands-free" slide lock allows for continuous use and instant off operation
- 60 minutes continuous run time with a full charge
- Durable self-contained, refillable, plastic fuel tank
- Butane not available - shipped dry



Industrial Model Heat Gun



700°F (371°C)
500°F (260°C)

Stock No. 501

- Aluminum die-cast construction
- Adjustable air intake controls air flow and temperature
- Heating element easily replaced
- Non-slip rubber base allows precise positioning

Replacement Heat Element

Stock No. 502

Shrink Tube Reflector, to 3/4" O.D tubing

Stock No. 503

Shrink Tube Reflector, to 2" O.D tubing

Stock No. 504

120V
14A



Typical Shrink Tube Reflector

Proheat Dual Temp Heat Gun

Stock No. 630

- Compact, light weight, and very easy to use
- Dual heat: 500°F (260°C) and 1000°F (540°C)
- 16 cubic feet/minute (CFM) air flow



Warranty does not cover heat elements and does not apply if the unit has been misused, abused or altered.

Heat Gun Kit

Stock No. 532

- Includes storage case, heat gun and 4 attachments: reducer, reflector, small spreader and large spreader
- Automatic safety shut-off feature when gun gets too hot



3M

HEAT SHRINK

Quality, reliable insulation and protection. 3M provides reliable electrical solutions for everyday tasks. Ideal for industrial, military, marine & automotive applications.

FEATURES & BENEFITS

- Resistance to salt water, automotive fluids and corrosive chemicals
- Various styles and shrink ratios available
- Puncture resistant polyolefin material
- Functional over a wide temperature range
- Adhesive lined construction available
- 3M™ Heat Shrink Tubing SMS is color coded for easy size identification



CORRUGATED LOOM |

- Convoluted surface protects against abrasion and pinching
- Variety of sizes and types available in split or non-split
- Split loom easily slides over assembly and closes for a permanent installation

Application

- Used to protect wire, cable, tubing and hoses



More sizes and colors may be available on special order. Call 800-328-2724 for details.



Typical assembly with split corrugated loom

Gaylord quantities available upon request.

ORDER BY TYPE, NOMINAL ID, BOX FOOTAGE

LCPR - 350 - 500
 Type Nominal ID Box Footage
 Final ordering stock number: LCPR-350-500.

Polyethylene Black and Red

- Split - Type LCP
- Red color helps to easily identify hot circuits and is typically used for trucking and transportation applications that need to follow the SAE wiring color convention



200°F (93°C)
-40°F (-40°C)

Nominal I.D. (in.)	Polyethylene Black Stock No.	Polyethylene Red Stock No.	Standard Box Footage
.125	LCP-125	----	100, 500, 2200
.250	LCP-250	----	100, 500, 3200
.350	LCP-350	LCPR-350	100, 500, 1900
.413	LCP-413	----	100, 500, 1500
.500	LCP-500	----	100, 250, 1100
.625	LCP-625	LCPR-625	100, 250, 800
.750	LCP-750	LCPR-750	100, 550
.875	LCP-875	----	100, 400
1.000	LCP-1000	----	100, 300
1.250	LCP-1250	----	200
2.000	LCP-2000	----	50
2.500	LCP-2500	----	50

ORDERING NOTES:

All shipments are subject to dimensional weight charges

Nylon

Black with gray stripe

- Split - Type LCN
- Material Certification: Delphi Packard M-2170, ASTM D4066



257°F (125°C)
-40°F (-40°C)

Nominal I.D. (in.)	Nylon Stock No.	Standard Box Footage
.125	LCN-125	100, 500, 4000
.250	LCN-250	100, 500, 3200
.350	LCN-350	100, 500, 1900
.413	LCN-413	100, 500, 1500
.500	LCN-500	100, 250, 1100
.625	LCN-625	100, 250, 800
.750	LCN-750	100, 550
.875	LCN-875	100, 400
1.000	LCN-1000	100, 300
1.250	LCN-1250	200
2.000	LCN-2000	50

ORDERING NOTES:

All shipments are subject to dimensional weight charges

Flame Retardant Polypropylene

Black with blue stripe

- Split - Type LFB



275°F (135°C)
-40°F (-40°C)



Nominal I.D. (in.)	Stock No.	Standard Box Footage
.250	LFB-250	100, 500, 3200
.350	LFB-350	100, 1300
.500	LFB-500	100, 800
.750	LFB-750	100, 400
1.000	LFB-1000	100, 300

ORDERING NOTES:

All shipments are subject to dimensional weight charges



CORRUGATED LOOM FITTINGS

- Increase efficiency of harness assembly
- Improves the appearance of your product
- Black polypropylene material
- Easy installation - simply snap together

Application

- Used to connect breakouts to loom



Stock No. 21110

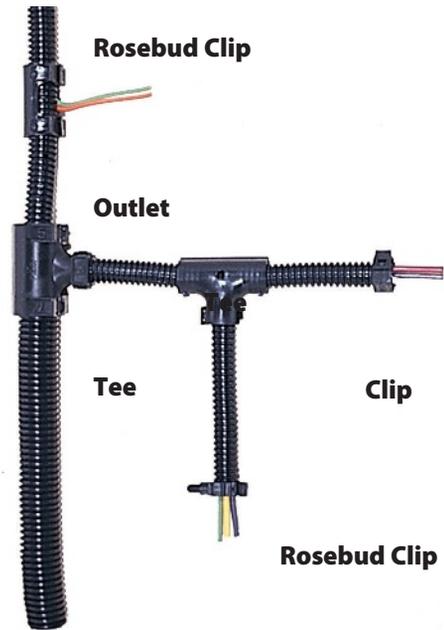


Stock No. 21141



Stock No. 21137

Tee Fitting Styles May Vary



Typical Application

Tee

Stock No.	Conduit Size I.D. (in.)		
	Left	Center	Right
21110	.413	.350	.350
21100	.413 or .500	.413 or .500	.413 or .500
21102	.500	.413	.750
21103	.750	.500	.750
21118	1.000	.625	1.000
21130	.350	.250	.250
21131	.350	.250	.350
21132	.500	.250	.500
21133	.750	.250	.750
21134	.750	.250	.500
21135	.500	.250	.350
21136	1.000	.750	.500
21137	1.000	.750	.750
21138	.350	.350	.250
21139	.250	.350	.250
21140	.500	.350	.500
21141	.500	.350	.350
21142	.500	.350	.250
21143	.500	.250	.250
21144	.750	.350	.750
21145	.750	.350	.500
21146	1.000	1.000	.750
21147	.750	.625	.500
21148	.500	.625	.350
21151	.750	1.000	.750
21153	.500	.625	.250

CORRUGATED LOOM TOOLS

Loom/Tubing Cutter

Stock No. 452

- Cuts up to 1¼" tubing
- High carbon teflon coated blade prevents injury



Replacement blade
Stock No. 453

Loom Insertion Tool

Stock No.	Size
571	.350
572	.500
573	.750
574	1.00
575	1.25

- Used to place wire bundles in split loom wire coverings



Outlet

- Holds loom tight at breakouts



Stock No.	Conduit Size I.D.
21104	.413
21105	.500
21116	.625

Rosebud Clip

- Secures loom end
- Can be used throughout harness
- Provides a quick mount
- Snaps into a ¼" dia. hole up to .150" thick material



Stock No.	Conduit Size I.D.
21108	.350
21109	.413 or .500
21111	.625
21112	.750

Clip

- Secures end of loom piece
- Can be used throughout harness



Stock No.	Conduit Size I.D.
21106	.413
21107	.500



ELECTRICAL TUBING

Tubing

- Highly flexible black PVC material
- Resistant to oil, water and corrosion
- UL recognized under component program
- CSA certified for 3/8" to 2" sizes
- VW-1 Flammability

Application

- Ideal for covering wires and fiber optic cables in high vibration areas



158°F (70°C)



Threaded Straight-In Fitting



Threaded Right Angle Fitting

Fittings

- Nylon material
- Easy assembly

Application

- Suitable for indoor or outdoor use

Threaded Fittings

Size	Stock No.		Thread Size
	Straight In Type	Right Angle	
3/8	27261	27269	1/2 NPT
1/2	27262	27270	1/2 NPT
3/4	27263	27271	3/4 NPT
1	27264	27272	1 NPT



Flexible non-metallic electrical tubing

Size	Stock No.	Typical O.D. (in.)	Typical I.D. (in.)	Standard Pack (ft.)
1/4	27209	.570	.400	100
3/8	27211	.700	.490	100
1/2	27212	.830	.630	100
3/4	27213	1.040	.830	100
1	27214	1.300	1.050	100
1 1/2	27216	1.880	1.590	100

ORDERING NOTES:

All shipments are subject to dimensional weight charges

LIQUID TIGHT CONDUIT

Fittings

- Nylon material
- Easy assembly

Application

- Suitable for indoor or outdoor use



UL
176°F (80°C) dry
140°F (60°C) wet
158°F (70°C) oil resistant



CSA
167°F (75°C)
0°F (-18°C)



Straight-In Fitting



Right Angle Fitting

Size	Stock No.		Thread Size
	Straight In type	Right Angle	
3/8	27240	27247	1/2 NPT
1/2	27241	27248	1/2 NPT
3/4	27242	27249	3/4 NPT
1	27243	27250	1 NPT



Conduit

- Smooth inner surface allows quick feeding of wires
- Non-metallic, gray PVC material
- Meets UL type B ratings
- Use fittings to make liquid tight connection

Application

- Suitable for indoor or outdoor use



Liquid tight conduit

Size	Stock No.	Typical O.D. (in.)	Typical I.D. (in.)	Standard Pack (ft.)
3/8	27200	.700	.490	100
1/2	27201	.830	.630	100
3/4	27202	1.040	.830	100
1	27203	1.300	1.050	100

ORDERING NOTES:

All shipments are subject to dimensional weight charges



SPIRAL WRAP TUBING



Typical Black Spool



- Breakout wires can easily exit through spiral slit
- Polyethylene offered in natural or UV resistant black
- Polypropylene offered in oil and chemical resistant black
- Right hand cut
- Supplied in 100 ft. spools

Application

- Ideal for use as a wire harness covering

Polypropylene Stock No.	Polyethylene Stock No.		Nominal O.D. (in.)	Approx. Wall Thickness (in.)	Maximum Bundle Dia. (in.)	Weight per 100 ft. Spool
	Natural	Black				
20033PP	20023	20033	1/8	.032	1/2	1 lb.
20030PP	20020	20030	1/4	.045	3/4	2 lbs.
20034PP	20024	20034	3/8	.052	1	3 lbs.
20031PP	20021	20031	1/2	.062	1 1/4	4 lbs.
20032PP	20022	20032	3/4	.065	2	8 lbs.
20035PP	20025	20035	1	.070	4	12 lbs.

ORDERING NOTES:

All shipments are subject to dimensional weight charges

VINYL TUBING



- Meets MIL-I-631D specs



221°F (105°C)
-4°F (-20°C)

Black Stock No.	Spool Size (ft.)	Nominal Size (in.)	Nominal I.D. (in.)	Wall Thickness (in.)
20222F	250	1/8 (#9)	.118	.020
20223C	100	3/16 (#5)	.188	.020
20223M	1000			
20224C	100	1/4	.250	.020
20224M	1000			
20225C	100	5/16	.313	.025
20225H	500			
20226C	100	3/8	.375	.025
20226H	500			
20227C	100	7/16	.438	.025
20227H	500			
20228C	100	1/2	.500	.025
20228H	500			
20229C	100	9/16	.563	.030
20230C	100	5/8	.625	.030
20230F	250			
20236C	100	1	1.000	.035

ORDERING NOTES:

All shipments are subject to dimensional weight charges

ALUMINUM REFLECTIVE SLEEVING



- Meets SAE J2302 specifications
- FMVSS 302 flammability protection
- ASTM E408 emissivity protection
- Passes common fluids, temperature, flammability and aging tests
- Resists humidity, ozone, UV and atmospheric chemicals
- RoHS compliant



392°F (200°C)
-40°F (-40°C)

Stock No.	Nominal O.D. (in.)	Spool Size (ft.)
20420	3/8	295
20421	1/2	230
20422	5/8	197
20423	3/4	147

SELF CLOSING SAE BRAIDED SLEEVING



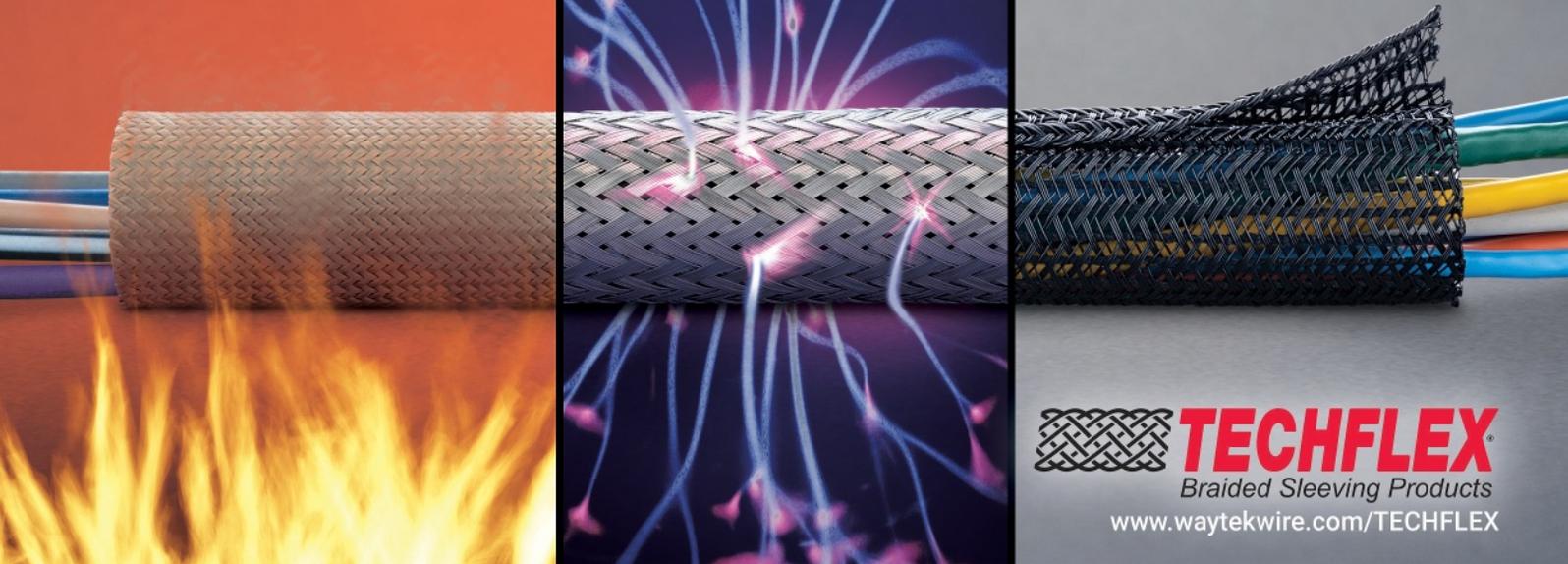
- PET smooth texture
- Economical cost
- Several OEM approvals, Delphi, Volvo, Lear, SAE
- 90 degree overlap
- Black



Melt Point:
347°F (175°C)

Stock No.	Box Size (ft.)	Size (mm)
20415	1500	(6 to 8 mm)
20416	800	(11 to 13 mm)
20417	500	(17 to 19 mm)
20418	400	(20 to 25 mm)

WE HAVE YOU COVERED



TECHFLEX
Braided Sleeving Products
www.waytekwire.com/TECHFLEX

EXPANDABLE SLEEVING | **TECHFLEX**

- Braided polyester yarn material
- Easily slips over wire harness or tubing
- Offered in standard or heavy wall for extra abrasion protection



Standard Expandable Sleeving - 10 mil thickness

Black Stock No.	Spool Size (ft.)	Nominal O.D. (in.)	Recommended Size Range	Weight per 1000 ft.
20307C	100	1/8	1/16 to 1/4	2 lbs
20307M	1000			
20301C	100	1/4	1/8 to 7/16	2.5 lbs.
20301M	1000			
20306C	125	3/8	1/4 to 1/2	5 lbs.
20306H	500			
20302C	100	1/2	1/4 to 3/4	8 lbs.
20302H	500			
20303K	50	3/4	1/2 to 1 1/4	12 lbs.
20303F	250			
20304K	50	1 1/4	3/4 to 1 3/4	16 lbs.
20304F	250			
20305K	50	1 3/4	1 1/4 to 2 3/4	27 lbs.
20305L	200			

Application

- Used to bundle wires and protect hoses



Heavy Wall Expandable Sleeving - 15 mil thickness

Black Stock No.	Spool Size (ft.)	Nominal O.D. (in.)	Recommended Size Range	Weight per 100 ft.
20350K	50	5/8	5/16 to 1	1.1 lbs.
20350F	250			
20351K	50	1	1/2 to 1 1/2	1.6 lbs.
20351F	250			
20352K	50	1 1/2	3/4 to 2	2.5 lbs.
20352F	250			
20353K	50	2	1 1/2 to 3	3.4 lbs.
20353L	200			
20354K	50	3	2 to 4	4.2 lbs.

ORDERING NOTES:

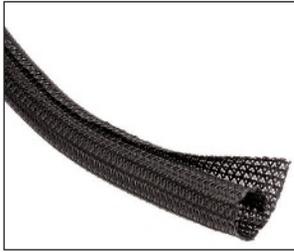
All shipments are subject to dimensional weight charges



More colors and custom lengths may be available on special order. Call 800-328-2724 for details.



**FLEXP F6
BRAIDED SPLIT SLEEVING**



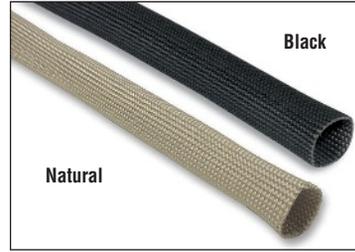
- Flexible and split laterally for easy installation
- Black semi-rigid braided material
- 25% edge overlap completely covers wires, plugs, connectors and splices
- UV resistant
- Cuts easily with hot knife

257°F (125°C)
-94°F (-70°C)

Black Stock No.	Box Size (ft.)	Nominal I.D. (in.)
20341K	50	.250
20341L	200	.250
20345K	50	.375
20345P	150	.375
20342K	50	.500
20342P	150	.500
20343K	50	.750
20343C	100	.750
20344K	50	1.000
20344C	100	1.000

ORDERING NOTES:
All shipments are subject to dimensional weight charges

**ULTRA HIGH TEMPERATURE
FIBERGLASS SLEEVING**



- 100% woven fiberglass sleeving
- UL recognized to VW-I flame retardant

Application

- Ideal for use on hydraulic lines and electrical insulation

1200°F (648°C)
-94°F (-70°C)

Black Stock No.	Natural Stock No.	Spool Size (ft.)	Nominal I.D. (in.)
20404F	----	250	#12
20406F	----	250	#10
20408F	----	250	#8
20400K	20410K	50	1/4 (#2)
20400F	20410F	250	1/4 (#2)
20401K	20411K	50	3/8
20401F	----	250	3/8
20402K	20412K	50	1/2
20402F	20412F	250	1/2
20403K	20413K	50	3/4
20403C	20413C	100	3/4

ORDERING NOTES:
All shipments are subject to dimensional weight charges

METAL BRAIDED SLEEVING



- Perfect for shielding on harnesses and cables
- Provides electromagnetic interference, radio frequency interference, electrostatic discharge protection
- Expands for easy installation
- Cut and abrasion resistant
- Tinned copper sleeve for shielding, grounding and decoration

Melt Point:
449°F (232°C)

Stock No.	Nominal O.D. (in.)	AWG of ends	Spool Size (ft.)	Weight per 100'
20361C	1/4	36	100	2.2 lbs
20362C	3/8	36	100	3.3 lbs
20363K	1/2	36	50	3.5 lbs
20364K	5/8	36	50	3.6 lbs
20367K	1	36	50	13.2 lbs
20368K	1 1/2	30	50	18.4 lbs
20369K	2 1/4	30	50	23.6 lbs

HEAVY-DUTY DURA-FLEX



- Protects industrial hoses and cables from harsh environments
- Tightly woven flexible nylon material
- Resistant to chemicals, UV damage, rot, engine chemicals and salt
- Non-expandable but easily slides over any application
- Cuts with scissors

250°F (121°C)
-108°F (78°C)

Application

- Ideal for assembly shops and manufacturers of heavy-duty equipment and hoses

Stock No.	Nominal I.D. (in.)	Length (ft.)	Lbs. per 100 ft.
20371	.710	50	2.57
20375	1.250	50	4.49
20378	1.750	50	6.13
20380	2.380	50	8.28

ORDERING NOTES:
All shipments are subject to dimensional weight charges

HOT KNIFE CUTTING TOOL



Handheld Hot Knife
Stock No. 554

- 110 volt operation
- Large knife blade heats quickly and easily cuts and seals most grades of braided sleeving



Stock No 554B

- Hot knife blade only

LIQUID TIGHT NYLON STRAIN RELIEFS



Dome Nut Style



90° Dome Elbow



Flex Nut Style



Locking Nut and Seal Ring



212°F (100°C)
-40°F (-40°C)

- Resistant to most chemicals and solvents
- Flex nut style prevents cable kinking
- Easy installation: push thru cable strain relief and tighten dome nut
- Use minimum size strain relief that fits your cable
- Concentric O-Ring groove in NEMA application with knockouts
- Seal ring guarantees NEMA 4x and 6 specifications (IP68)
- IP69K splash proof rating

Cable Dia Min - Max	Thread Size NPT	Mounting Hole Sizes	Dome Nut Stock No.	90° Dome Elbow Stock No.	Flex Nut Stock No.	Lock Nut Stock No.	Seal Ring Stock No.
.11 - .26	1/4 (PG 7)	.490	24608	---	24621	24644	24653
.08 - .20	1/4 (PG 7)	.490	24609	---	24622	24644	24653
.16 - .31	3/8	.680	24600	24660	24615	24640	24650
.08 - .24	3/8	.680	24601	---	24616	24640	24650
.24 - .47	1/2	.830	24602	24662	24617	24641	24651
.20 - .35	1/2	.830	24603	24663	24618	24641	24651
.51 - .71	3/4	1.050	24604	24664	24619	24642	24652
.35 - .63	3/4	1.050	24605	24665	24620	24642	24652
.71 - .98	1	1.350	24606	---	---	24643	---
.51 - .79	1	1.350	24607	---	---	24643	---

ORDERING NOTES:
Locking nut required when mounted in a clearance hole (not threaded in place).

All dimensions in inches.

LIQUID TIGHT BRASS STRAIN RELIEFS



- Resistant to saltwater, most acids, alcohol, esters, ketones, ether, gasoline, mineral oil, animal oil, vegetable oil
- Flex nut style prevents cable kinking
- Easy installation: push thru cable strain relief and tighten dome nut
- Use minimum size strain relief that fits your cable
- Concentric O-Ring groove in NEMA application with knockouts
- Seal ring guarantees NEMA 4x and 6 specifications (IP68)
- IP69K splash proof rating



Dome Nut
Stock No. 24702



Flex Nut
Stock No. 24717



Lock Nut
Stock No. 24741

Cable Dia. Min - Max	Thread Size NPT	Mounting Hole Sizes	Dome Nut Stock No.	Flex Nut Stock No.	Lock Nut Stock No.
.24 - .47	1/2	.830	24702	24717	24741
.20 - .35	1/2	.830	24703	24718	24741
.51 - .71	3/4	1.050	24704	24719	24742

All dimensions in inches.

LIQUID TIGHT NYLON CORD GRIPS



Dome Nut Style



Flex Nut Style



Locking Nut and Seal Ring



Operating Temperatures:
Static: 239°F (115°C)
-40°F (-40°C)
Dynamic: 212°F (100°C)
-4°F (-20°C)

- NEMA type 6 enclosures (IP 68)
- Flammability rating 94V-2
- Resists salt water, weak acids, gasoline, alcohol, oil, grease, and common solvents
- Use minimum size strain relief that fits your cable
- Use with service cord on page 17

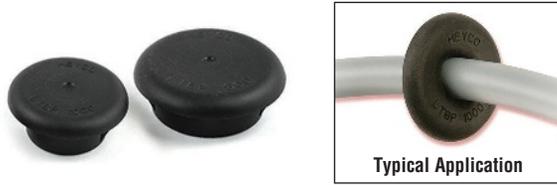
Cable Dia Min - Max	Designed to Fit Thread Size	Mounting Hole Sizes	Dome Nut		Flex Nut		Lock Nut		Seal Ring	
			Stock No.	Heyco No.						
.115 - .250	1/4	.540	24589	M4516	24623	3237	24610	M9142	24654	3258
.065 - .210	1/4	.540	24590	M4514	24624	3464	24610	M9142	24654	3258
.181 - .312	3/8	.670	24591	3228	24625	3254	24611	8461	24655	3259
.069 - .187	3/8	.670	24592	3458	24626	3474	24611	8461	24655	3259
.230 - .546	1/2	.875	24593	3200	24627	3266	24612	8463	24656	3260
.170 - .450	1/2	.875	24594	3231	24628	3251	24612	8463	24656	3260
.450 - .709	3/4	1.068	24595	3234	24629	3239	24613	8465	24657	3261
.250 - .485	3/4	1.068	24596	3460	24630	3462	24613	8465	24657	3261
.590 - 1.00	1	1.350	24597	8437	---	---	24614	8467	---	---
.490 - .785	1	1.326	24598	M8439	---	---	24614	8467	---	---

ORDERING NOTES:
Locking nut required when mounted in a clearance hole (not threaded in place).

All dimensions in inches.

LIQUID TIGHT HOLE PLUG |

- For use in panels as thin as .020" (0.5 mm) and as thick as .250" (6.4 mm)
- Provides liquid tight closure when used as plugs
- When pierced, functions as a liquid tight bushing that converts raw edged holes to smooth, neat, insulated holes



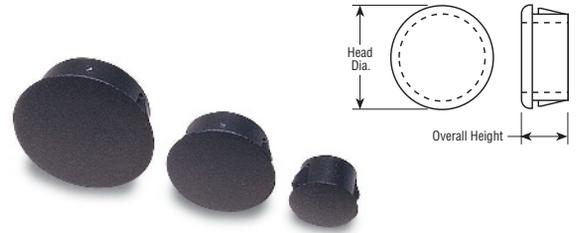
Typical Application

Stock No.	Mounting Hole Dia.	Cable Dia. Range	Head Dia.	Overall Height
24430	.500	.080 - .200	.920	.320
24431	.625	.130 - .375	1.030	.320
24432	.750	.175 - .400	1.105	.320
24433	.875	.130 - .450	1.280	.320
24434	1.000	.200 - .715	1.430	.320
24435	1.093	.250 - .765	1.530	.320
24436	1.375	.300 - .950	1.800	.670
24437	1.500	.375 - 1.060	1.930	.670

All dimensions in inches.

LOCKING HOLE PLUGS |

- Used to plug holes in panels or sheet metal
- Black nylon construction

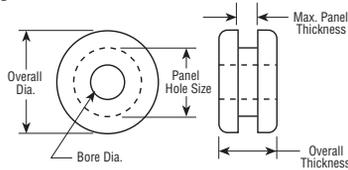


Stock No.	Mounting Hole Dia.	Head Dia.	Overall Height	Maximum Panel Thickness
24401	.250	.312	.312	.062
24403	.375	.468	.406	.125
24405	.500	.578	.406	.125
24407	.625	.718	.406	.125
24409	.750	.922	.406	.125
24411	.875	.016	.453	.125
24412	1.000	.023	.453	.125

All dimensions in inches.

RUBBER GROMMETS |

- Protects wire, cable and hoses passing through metal plates and panels



More sizes available on special order. Call 800-328-2724 for details.

Stock No.	Bore Dia.	Panel Hole Size	Maximum Panel Thickness	Overall Diameter	Overall Thickness
24500	3/16	5/16	1/16	1/2	1/4
24501	7/16	9/16	1/16	3/4	1/4
24502	1/8	1/4	1/16	11/32	3/16
24503	1/8	3/8	3/32	1/2	5/16
24504	3/16	9/32	3/32	7/16	7/32
24523	3/16	5/16	1/8	7/16	1/4
24524	3/16	5/16	3/16	7/16	5/16
24505	1/4	7/16	1/16	5/8	3/16
24506	1/4	3/8	1/16	9/16	9/32
24507	1/4	3/8	3/32	1/2	1/4
24508	5/16	9/16	1/16	13/16	5/16
24509	5/16	7/16	1/16	5/8	9/32
24510	5/16	7/16	3/32	5/8	5/16
24511	3/8	5/8	1/16	7/8	5/16
24512	3/8	1/2	1/16	5/8	1/4
24513	7/16	11/16	1/16	15/16	5/16
24514	1/2	13/16	1/16	11/16	5/16
24515	1/2	11/4	1/16	11/2	1/4
24516	1/2	3/4	3/32	7/8	11/32
24517	9/16	13/16	1/16	11/16	5/16
24518	5/8	7/8	1/16	11/8	5/16
24519	5/8	11/4	1/16	11/2	1/4
24520	3/4	11/16	1/16	13/8	3/8
24521	3/4	17/16	1/16	113/16	3/8
24522	7/8	11/4	1/16	15/8	7/16

All dimensions in inches.

SNAP BUSHINGS |

- Eliminates sharp edges and protects wires and harnesses passing through holes in metal plates and panels
- Resists up to 35 lbs. pull



Stock No.	Mounting Hole Dia.	Inside Dia.	Head Dia.	Overall Height	Maximum Panel Thickness
24100	.250	1/8	.312	.312	.062
24101	.375	1/4	.468	.406	.125
24102	.500	3/8	.578	.406	.125
24103	.625	1/2	.718	.406	.125
24104	.750	5/8	.843	.406	.125
24106*	.875	11/16	.953	.453	.125
24105	1.000	3/4	1.125	.453	.125
24107	1.250	15/16	1.359	.453	.125
24108	1.375	1	1.468	.453	.125
24109	1.500	15/16	1.609	.453	.125
24110	1.750	13/8	1.875	.453	.125
24111	2.000	15/8	2.125	.453	.125

* Fits standard 1/2" electrical knockout.

All dimensions in inches.

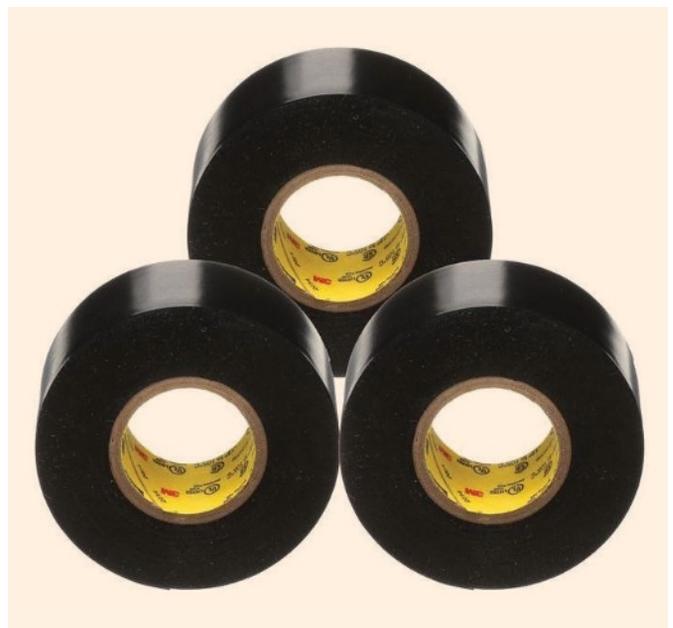


The Key to Selecting the Right Electrical Tape for Your Application

Retrieved from: "Tapes to Help Power Through Your Toughest Jobs", 3M™, 2018, page 8

THERE ARE SOME BASIC RULES TO FOLLOW WHEN YOU'RE SELECTING ELECTRICAL TAPE.

- Vinyl backed tapes have a strong, flexible, abrasion resistant PVC backing which provides a barrier from moisture and corrosive elements. They are often the first and most economical choice for primary and secondary insulation.
- Rubber tapes are designed for use in splicing and terminating wires and cables with options rated up to 69kV. They have excellent physical and electrical properties and are ideal for adding moisture protection and padding to electrical connections and cables.
- Fleece tapes offer noise damping, abrasion resistance and bundling strength – while keeping harnesses flexible and supporting an easy harness assembly process. From passenger to engine compartment applications, focusing on automotive trends like car individualization, e-mobility or low-VOC products.

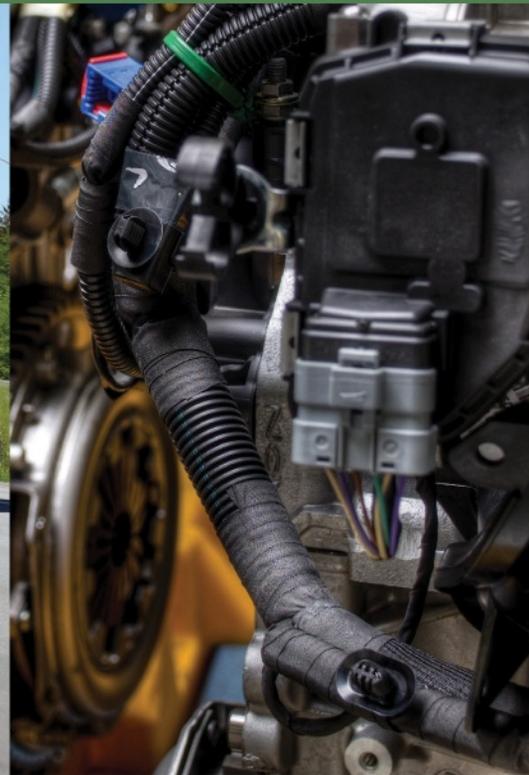


WRAPPING TIPS

Type of Tape	Number of Layers/Application Instructions
Vinyl Electrical - Jacketing and Mechanical Protection	Always use a minimum of two half-lapped layers. The last layer should be wrapped in a more relaxed manner – let the last wrap relax to prevent the layer from flagging.
Rubber Tape - Electrical Insulation Mechanical Padding Water Sealing and Shaping	Wrap tape tightly to achieve the water tight seal. Rubber tapes are typically overwrapped with vinyl tape.
High Voltage Tape - Insulating and Semi-conductive Layers	Apply outside of roll to the cable, in highly stretched half-lapped layers. Never use a semi-conductive tape as an insulation.
Fleece Tape - Soft PVC tape with a good film flexibility	Fleece tapes are to be wrapped tightly and is preferably used for cable harnessing coating the application.

TAPES & CHEMICALS

Electrical Tapes	90-91	Electricians Tape	91
Bonding Tapes	90	Packing Tapes	91
Sealing Tapes	90	Reclosable Fasteners	92
Conspicuity Tapes	90	Dielectric Grease	92
PVC Tapes	91	Anti-Seize/Lubricating Compound	92
Wire Harness Tapes	91	Corrosion Preventive Sealant	92
Cold Shrink Tape	91	Silicone Sealants	92
Self Fusing Tape	91	Slip-Resistant Tape	92
Duct Tape	91	Solder Pellets	92
Aluminum Foil Tape	91	Flux	92



3M

tesa[®]

3M TAPES |

Electrical Tapes	Stock No.	Color	Roll Size	Thickness	Temperature Range	UL Listed
Scotch® Super 33+™ Professional Grade 	21007	Black	¾" x 20'	7 mils	221°F (105°C) 0°F (-18°C)	UL 510
	21009	Black	¾" x 66'			
Temflex™ 1700 Vinyl Electrical Tape 	21011	Black	¾" x 60'	7 mils	176°F (80°C) 32°F (0°C)	UL 510
Scotch® Super 88 Vinyl Electrical Tape 	21008	Black	¾" x 66'	8.5 mils	221°F (105°C) 0°F (-18°C)	UL 510
Highland™ Vinyl Electrical Tape 	21012	Black	¾" x 66'	7 mils	176°F (80°C) 32°F (0°C)	UL 510
Scotch® Vinyl Electrical Tape 35 Color Coded Professional Grade 	20991	Brown	¾" x 66'	7 mils	221°F (105°C) 0°F (-18°C)	UL 510
	20992	Red				
	20993	Orange				
	20994	Yellow				
	20995	Green				
	20996	Blue				
	20997	Violet				
	20998	Gray				
	20999	White				

Bonding Tapes	Stock No.	Color	Roll Size	Thickness	Temperature Range
Scotch® Glass Cloth Electrical Tape 27 	21013	White	½" x 66'	7 mils	266°F (130°C)
	21014	White	¾" x 66'		
VHB™ Tape 4941 	20957	White	1" x 108'	45 mils	230°F (110°C) -31°F (-35°C)
	20959	Black	¾" x 108'		

Splicing and Sealing Compounds	Stock No.	Color	Roll Size	Thickness	Temperature Range
Linerless Splicing Compound 2242 (Rubber Tape) 	20974	Black	¾" x 15'	30 mils	194°F (90°C)
	20975	Black	1½" x 15'		
Scotch® Electrical Moisture Sealant 06147 	20976	Black	2½" x 10'	45 mils	176°F (80°C)
	20977	Black	2½" x 2½" 25 patches per box		

Conspicuity Tape	Stock No.	Color	Roll Size	Thickness
983 Series 	20804	6' long red, 6' long white	2' x 150'	14-18 mils
		20805		
	20810	Yellow	2' x 150'	14-18 mils
963 Series	20806	7" long white, 11" long red	2' x 150'	10-14 mils

3M SCOTCH® ELECTRICAL TAPE SOLUTIONS

3M professional grade Vinyl Electrical Tape 35 offers superior electrical and mechanical protection. These durable tapes are perfect for applications requiring color coding.

FEATURES & BENEFITS

- Tensile strength rating of 17 lbs per inch
- Stretches to conform to virtually any shape
- Resists UV rays, abrasion, moisture, alkalis, solvents, and many acids
- Pressure-sensitive, rubber-resin adhesive and PVC backing
- UL listed, CSA certified and RoHS 2011/65/EU compliant
- Various colors and lengths available:



PVC TAPES

NEW



PVC Wire Harness Tape

- Soft PVC film wire harness tape with an acrylic adhesive
- PV2 tape for basic bundling up to a temperature class of 221°F (105°C)

Stock No.	Color	Roll Size
20927	Black	¾" x 108'

PVC Multi-Purpose Tape

- Special formulated soft PVC tape with a good film flexibility, acrylic adhesive
- Due to the UV stable acrylic adhesive, it is suitable for permanent applications

Stock No.	Color	Roll Size
20929	Black	1" x 108'

WIRE HARNESS TAPES

NEW



Anti-Abrasion Cloth Wire Harness Tape

- Double layer PET cloth coated at the edges with an advanced acrylic adhesive for lengthwise application
- Provides superior protection and flexibility of small diameter harnesses

Stock No.	Color	Roll Size
20923	Black	¾" x 82'
20924	Black	1" x 82'

NVG Fleece Wire Harness Tape

- PET fleece harness tape with a rubber-based adhesive
- Provides flexibility, noise damping and is hand-tearable

Stock No.	Color	Roll Size
20925	Black	¾" x 82'
20926	Black	1" x 82'

TAPES

Electrical Tape	Stock No.	Color	Roll Size	Thick-ness	Temperature Range	UL Listed
PVC Electrical Tape 	21000	Black	¾" x 60'	7 mils	176°F (80°C) 0°F (-18°C)	---
Premium All-Weather PVC Electrical Tape 	21010	Black	¾" x 66'	8 mils	176°F (80°C) 0°F (-18°C)	---
Rubber Tape 	20945	Blue	¾" x 22'	30 mils	176°F (80°C)	UL 510
Colored Vinyl Electrical Tape 	20911 20912 20913 20914 20915 20916 20917 20918 20919	Brown Red Orange Yellow Green Blue Violet Gray White	¾" x 66'	7 mils	176°F (80°C) 32°F (0°C)	---

Cold Shrink Tape	Stock No.	Color	Roll Size	Temperature Range
	20970	Black	1" x 10'	212°F (100°C) -40°F (-40°C)
	20971	Black	1" x 30'	

Self Fusing Tape	Stock No.	Color	Roll Size	Temperature Range
	20890	Black	1" x 20'	500°F (260°C) -85°F (-65°C)
	20892	Red	1" x 20'	
	20893	Orange	1" x 20'	

Duct Tape	Stock No.	Color	Roll Size	Temperature Range
	Premium			
	20955	Silver	2" x 60 yds	200°F (93°C)
	All-Purpose			
	20950	Silver	2" x 60 yds	200°F (93°C)

Aluminum Foil Tape	Stock No.	Color	Roll Size	Thickness	Temperature Range
	20958	Gray	2" x 180'	5 mils	300°F (149°C) -65°F (-54°C)

Electricians Tape	Stock No.	Color	Roll Size	Thickness	Temperature Range
Scotch® 2000 Bundling Tape 	20956	Gray	2" x 150'	6 mils	221°F (105°C)

Packaging Tape	Stock No.	Color	Roll Size	Thickness
Scotch® 3750 Premium Box Sealing Tape 	20935	Clear	2" x 180' 3" Core	3.2 mils
	20933	Clear	2" x 300' 3" Core	3.1 mils

RECLOSABLE FASTENERS |

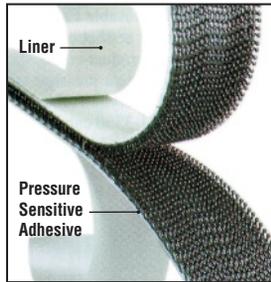
3M™ reclosable fastening systems replace conventional fastening methods to add greater convenience and easier accessibility while saving steps and costs in the production process. Fast, easy open-and-close action makes these products ideal for dozens of applications where hooks, latches, snaps, zippers, dials, screws, bolts and other fastening methods once prevailed.

3M™ Dual Lock™ Reclosable Fastener

- Offered in pressure sensitive adhesive plastic strips or non-adhesive rounds
- Can mate to itself
- 5 times more holding power than hook & loop

Application

- Used in electronics, transportation, and manufacturing industries



DualLock Rounds



Bulk Rolls

Stock No.	Stems per inch	Color	Size
92002	170	Black	1"x50 yd roll
92003	400	Black	1"x50 yd roll

Mini-Packs

Stock No.	Stems per inch	Color	Size
92006	170 & 400	Black	1"x4.9 yd roll

Rounds

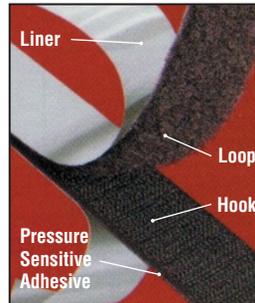
Stock No.	Stems per inch	Color	Size
92008	400	Black	1 3/16" dia.

3M™ Hook and Loop Fasteners

- Pressure sensitive woven strips with general purpose adhesive backing
- Stiff hook strip presses together with pliable loop strip
- For high-strength fastening, **Stock No. 92001** can mate with Dual Lock **Stock No. 92002**

Application

- Used in electronics, transportation, and manufacturing industries



Bulk Rolls

Stock No.	Type	Color	Size
92000	Hook	Black	1"x50 yd roll
92001	Loop	Black	1"x50 yd roll

Mini-Packs

Stock No.	Type	Color	Size
92004	Hook & Loop	Black	1"x4.9 yd roll
92005	Hook & Loop	White	1"x4.9 yd roll

CHEMICALS |

Dielectric Grease	Stock No.	Size	Temperature Range
	29050	5 oz. Tube	400°F (204°C) -40°F (-40°C)
	29051	1/3 oz. Tube	

Anti-Seize & Lubricating Compound	Stock No.	Size	Temperature Range
	29070	8 oz. Brush-top	2000°F (1093°C) -200°F (-129°C)
	29071	16 oz. Brush-top	

Ultra-Seal Corrosion Preventive Sealant	Stock No.	Size	Temperature Range
	29056	4 oz. Tube	302°F (105°C) -40°F (-40°C)

Silicone Sealants	Stock No.	Color	Grade	Temperature Range
	29004	Black	Industrial	450°F 232°C) -60°F (-51°C)
	29005	Clear	Industrial	
	29021	Clear	Marine	

Solder Pellets	Stock No.	Wire Ga	Color
	36230	4	Gray
	36231	2	Green
	36232	1	Pink
	36233	1/0	Black
	36234	2/0	Orange
	36235	3/0	Purple
	36236	4/0	Yellow

Flux is required. Sold in packs of 25

3M™ Safety-Walk™ Slip-Resistant Medium Resilient Tapes and Treads	Stock No.	Size
	20870	6" Wide 24" Long

Adheres to any dry, clean surface

Flux	Stock No.	Size
	36237	2 oz. Bottle

CLIPS & CLAMPS

Adhesive-Backed	94
Heavy Duty Mounting System	94
Nylon Cable Clamps	95
Metal Clamps	95-96
Hose Clamps	97



HellermannTyton

ADHESIVE-BACKED CLAMPS

Adhesive-backed clamps are available for a variety of applications. The 1/32" thick adhesive tape is designed to stick securely to clean, smooth surfaces.



Stock No. 25374

Black Adjustable Adhesive Backed Wire Clamp

- Adjustable round wire mount
- Black molded nylon material
- Polyethylene foam tape
- 1/32" thick adhesive
- Adjustable ratchet design

Stock No.	Maximum Wire Bundle	Approx. Base Width	Approx. Base Length
25370	.390	0.750	1.000
25371	.490	0.750	1.281
25372	.560	0.750	1.455
25373	.770	1.000	1.660
25374	.940	1.000	1.750

All dimensions in inches.



Stock No. 25335



Stock No. 25337

Natural Adhesive Backed Wire Clamp

- Round wire mounts
- Natural molded nylon material
- Polyethylene foam tape
- 1/32" thick adhesive

Stock No.	Maximum Wire Bundle	Approx. Base Width	Approx. Base Length	Approx. Overall Height
25335	.125	0.468	0.515	0.200
25336	.187	0.650	0.650	0.260
25338	.460	0.750	0.750	0.310
25337	.460	1.000	1.000	0.340

All dimensions in inches.

Stock No. 25338

Stock No. 25336



Stock No. 25362

Double-Backed Press Clip

- Molded of white nylon 6/6
- High strength polyethylene foam tape
- 1/4" maximum bundle diameter
- .25" wide

Application

- Quick adhesion for holding wire and cable to any smooth, flat surface



See wire and cable products on pages 10 - 18.

HEAVY-DUTY MOUNTING SYSTEM | HellermannTyton

Dual Swivel Saddle Mount

- Reduces abrasion or wear by keeping items separated
- Mount rotates to any angle
- 250 lbs. minimum pull apart force
- Heat stabilized
- Assembly requires two cable ties, one around each bundle
- Works best with the High Impact Resistant Tie, **Stock No. 21295**, sold separately on page 202

Application

- Hold wires and hoses



Stock No. 21290
(Tyton No. DSW50HSK2)



Typical Application

Saddle Mounts

- High impact heat stabilized black nylon
- Elevates bundles off mounting surface
 - *Fir Tree Mount*: snaps into a 1/2" hole and will hold three bundles

Application

- Hold and protect wires, cables, tubing, conduit, etc.



Fir Tree Mount
Stock No. 21291
(Tyton No. S3STM500HIRHSC2)

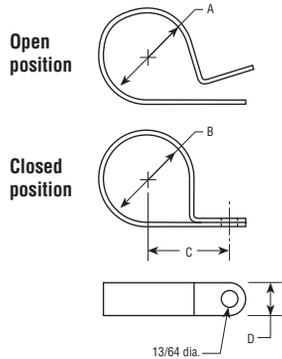


Typical Application

NYLON CABLE CLAMPS

White Stock No.	Black Stock No.	Size in.	Typical Dimensions			
			A	B	C	D
Light Duty 3/8" - Width						
25000	25050	1/8	0.125	0.115	0.325	3/8
25001	25051	3/16	0.187	0.172	0.378	3/8
25002	25052	1/4	0.250	0.234	0.409	3/8
25003	25053	5/16	0.312	0.279	0.441	3/8
25004	25054	3/8	0.375	0.359	0.471	3/8
25005	25055	7/16	0.437	0.422	0.519	3/8
25006	25056	1/2	0.500	0.484	0.550	3/8
Heavy-Duty 1/2" - Width						
25007	25057	1/8	0.125	0.115	0.360	1/2
25008	25058	3/16	0.187	0.172	0.423	1/2
25009	25059	1/4	0.250	0.234	0.457	1/2
25010	25060	5/16	0.312	0.297	0.498	1/2
25011	25061	3/8	0.375	0.359	0.529	1/2
25012	25062	7/16	0.437	0.422	0.560	1/2
25013	25063	1/2	0.500	0.484	0.592	1/2
25014	25064	9/16	0.563	0.547	0.623	1/2
25015	25065	5/8	0.625	0.609	0.654	1/2
25016	25066	11/16	0.687	0.672	0.752	1/2
25017	25067	3/4	0.750	0.734	0.783	1/2
----	25068	13/16	0.812	0.797	0.814	1/2
25019	25069	7/8	0.875	0.859	0.845	1/2
25020	25070	1	1.000	0.984	0.908	1/2
25021	25071	1 1/8	1.125	1.102	0.970	1/2
25023	25073	1 1/4	1.250	1.227	1.062	1/2
25025	25075	1 1/2	1.500	1.477	1.187	1/2

All dimensions in inches.



Stock No. 25013



Stock No. 25000

Stock No. 25067



Stock No. 25052

- High quality nylon
- Molded in open position for easy assembly
- Beveled inner edges to prevent abrasion

Application

- Secure cable, tubing, wire, fiber optics



METAL CLAMPS

Nominal Size	E	Stock No.
1/4	0.529	25204
3/8	0.592	25206
1/2	0.654	25208
5/8	0.780	25210
3/4	0.842	25212
7/8	0.889	25214
1	0.951	25216
1 1/4	1.092	25220
1 1/2	1.217	25224
1 3/4	1.342	25228
2	1.475	25232

All dimensions in inches.



Fully Cushioned Clamp



Stock No. 25216

Stock No. 25206

- General purpose EPDM
- Plated steel
- 1/2" wide
- .265" mounting hole diameter

Application

- Hold cable, tubing, wire, etc.

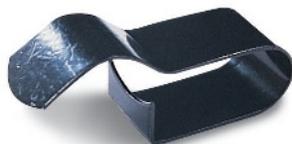


Other widths and materials may be available. Call 800-328-2724 for details.

Metal Chassis Clamp

Size (Length)	Stock No.
1.135	25311
1.715	25312
1.600	25313

All dimensions in inches.



- Heat treated spring steel with a black corrosion resistant finish
- Easily snaps in place

Application

- Secure wires, cables and hoses

2-Tube Cushioned Cable Clamp

Nominal Size	Stock No.	F	G
1/2	25160	.500	.764
3/4	25161	.750	.889
1	25162	1.000	1.014
1 1/4	25163	1.125	1.159

All dimensions in inches.



- Heavy-duty
- General purpose EPDM
- Plated steel
- Molded in open position for easy assembly
- 3/4" wide
- .406" mounting hole diameter

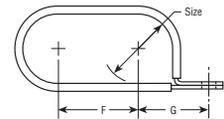
Application

- Hold two wire assemblies or tubing

Stock No. 25163



Stock No. 25161



Metal Cable Clamp

Nominal Size	Stock No.
1/4	25400
5/16	25401
3/8	25402
1/2	25403
5/8	25404
3/4	25405
1	25407

All dimensions in inches.



Stock No. 25401

Stock No. 25403

Stock No. 25407



- Heavy-duty
- Corrosion resistant steel
- 1/2" wide
- .204" mounting hole diameter

Application

- Hold hoses, heavy cable assemblies and other similar applications

PARTIALLY CUSHIONED METAL CABLE CLAMPS



Plated Steel, Stainless Steel & Aluminum

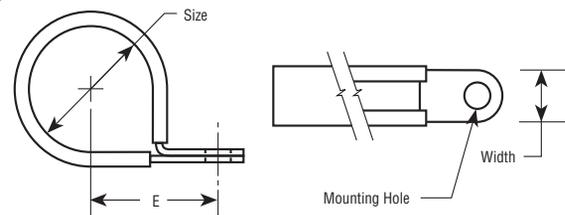
- Heavy-duty
- General purpose EPDM
- Durable cushion helps reduce vibration while protecting your product
- Open position for ease of assembly
- .265 mounting hole diameter (1/2" wide clamps)
- .406 mounting hole diameter (3/4" wide clamps)

Application

- Hold hydraulic hoses, wire harnesses and cables
- Heavy-duty clamping applications

Nominal Size	1/2" wide clamps			3/4" wide clamps		
	E	Plated Steel Stock No.	Stainless Steel Stock No.	Aluminum Stock No.	E	Plated Steel Stock No.
1/4	0.529	25104	25604	25804	0.639	25704
3/8	0.592	25106	25606	25806	0.702	25706
1/2	0.654	25108	25608	25808	0.764	25708
5/8	0.780	25110	25610	25810	0.827	25710
3/4	0.842	25112	25612	25812	0.889	25712
7/8	0.889	25114	25614	25814	0.952	25714
1	0.951	25116	25616	25816	1.014	25716
1 1/8	1.030	25118	25618	----	1.097	25718
1 1/4	1.092	25120	25620	25820	1.159	25720
1 1/2	1.217	25124	25624	25824	1.284	25724
1 3/4	1.342	25128	25628	----	1.409	25728
2	1.475	25132	25632	25832	1.534	25732
2 1/2	1.750	25140	25640	----	1.784	25740
3	2.000	25148	25648	----	2.034	25748

All dimensions in inches.



VINYL COATED CUSHIONED CLAMP



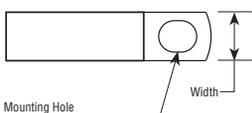
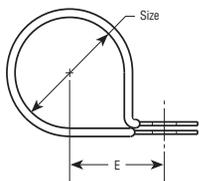
- Vinyl plastisol cushion is permanently bonded to the zinc plated metal and cannot be removed
- Cushion protects and reduces vibration

Full Clamp

- Fully encloses clamping diameter
- Contour shaped clamping diameter is specially designed for ease of assembly
- .281 mounting hole diameter (1/2" wide clamps)
- .406 mounting hole diameter (3/4" wide clamps)

Application

- Hold cable assemblies, wire harnesses and hoses

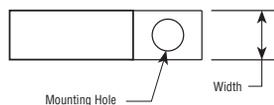
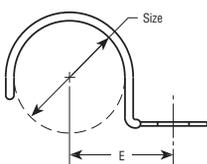


Half Clamp

- Easy to assemble
- .281 mounting hole diameter

Application

- Hold wires, tubes, conduit and piping



See corrugated loom products on page 80.

Nominal Size	1/2" wide clamps		3/4" wide clamps	
	E	Stock No.	E	Stock No.
1/4	0.281	25507	0.406	25557
3/8	0.593	25506	0.718	25556
1/2	0.656	25508	0.781	25558
5/8	0.718	25510	0.843	25560
3/4	0.781	25512	0.906	25562
1	0.906	25516	1.031	25566
1 1/4	1.031	25520	1.156	25570
1 1/2	1.156	25524	1.281	25574
2	1.437	25532	1.562	25582
3	1.937	25548	2.062	25598

All dimensions in inches.

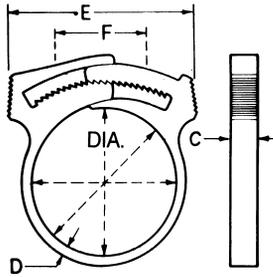


Nominal Size	E	Clamp Width	Stock No.
1/4	0.500	1/2	25454
3/8	0.562	5/8	25456
1/2	0.687	3/8	25458
5/8	0.812	5/8	25460
3/4	0.875	5/8	25462
7/8	0.968	3/4	25464
1	1.062	3/4	25466

All dimensions in inches.



NYLON 6/6 GLASS FILLED SNAPPER HOSE & CABLE CLAMPS | HellermannTyton



- Glass-filled black nylon can withstand high temperatures
- Adjustable; allows application after the hose is connected
- Quick, ratchet closure provides specific take-up; eliminates excessive tightening
- Closure remains in place when tightened
- Easily reopens with a lateral effort

Application

- Secure hoses



White acetal clamps may be available on special order. Call 800-328-2724 for details.

Stock No.	Size Min. Dia.	Size Max. Dia.	Typical Dimensions				No. of Teeth
			C	D	E	F	
28501-1.25	0.275	0.297	0.150	0.042	0.491	0.408	8
28501-1.5	0.314	0.350	0.147	0.055	0.593	0.414	12
28501-2	0.359	0.403	0.233	0.068	0.679	0.477	12
28501-4	0.413	0.462	0.235	0.067	0.756	0.529	12
28501-6	0.459	0.522	0.235	0.070	0.846	0.578	14
28501-7	0.463	0.558	0.235	0.070	0.981	0.653	18
28501-8	0.524	0.599	0.233	0.070	0.981	0.653	16
28501-10	0.582	0.664	0.235	0.069	1.038	0.682	16
28501-12	0.626	0.716	0.233	0.070	1.172	0.816	18
28501-14	0.717	0.819	0.235	0.068	1.168	0.751	18
28501-16	0.776	0.867	0.234	0.068	1.222	0.795	18
28501-18	0.802	0.940	0.240	0.070	1.418	0.958	22
28501-22	0.948	1.096	0.236	0.071	1.488	0.941	22
28501-24	1.007	1.160	0.295	0.070	1.538	0.973	22
28501-28	1.148	1.325	0.291	0.069	1.647	1.018	26
28501-32	1.245	1.436	0.290	0.069	1.741	1.075	26
28501-60	2.308	2.639	0.294	0.068	2.585	1.463	40

All dimensions in inches.

Assembly Tool for Plastic Hose Clamps

- Mechanical installation
- Reduces operator fatigue and installation time
- Fits all plastic hose clamps from Stock No. 28501-1.25 through 28501-60

Application

- Maintenance tool for assembly and disassembly of plastic hose clamps



Stock No. 451

HOSE CLAMPS | IDEAL

NEW

Standard Stock No.	Stainless Steel Stock No.	Size	Nominal Range Min. to Max.
28000	28200	Micro 4	1/4 to 5/8
28001	28201	Micro 5	7/16 to 1 1/16
28003	28203	Micro 8	7/16 to 1
28006	28206	6	3/8 to 7/8
28008	28208	8	7/16 to 1
28010	28210	10	9/16 to 1 1/16
28012	28212	12	9/16 to 1 1/4
28016	28216	16	1 1/16 to 1 1/2
28020	28220	20	3/4 to 1 3/4
28024	28224	24	1 1/16 to 2
28028	28228	28	1 5/16 to 2 1/4
28032	28232	32	1 9/16 to 2 1/2
28036	28236	36	1 13/16 to 2 3/4
28040	28240	40	2 1/16 to 3
28044	28244	44	2 5/16 to 3 1/4
28048	28248	48	2 9/16 to 3 1/2
28056	28256	56	3 1/16 to 4
28064	28264	64	2 1/2 to 4 1/2

All dimensions in inches.

High Strength Stock No.	Extended Range Min. to Max.
28100	1/4 to 2 5/8
28101	2 1/8 to 4 1/8
28102	4 to 6 1/8
28103	6 1/8 to 9 1/8

All dimensions in inches.

Standard Hose Clamp

- General purpose
- Closure remains in place when tightened
- Easily reopens with a lateral effort
- 1/2" wide, Micro Clamp: 5/16" wide
- Standard Hose Clamp: stainless steel band and housing with a plated steel screw
- Stainless Steel Hose Clamp: all stainless, including screw; used in highly corrosive areas

Application

- Secure hoses, tubing and fittings



Standard or Stainless Steel

High Strength Hose Clamp

- All stainless steel construction
- Twice the clamping strength of standard hose clamps
- Extra notches in the band for extended range
- 5/8" wide

Application

- Use in demanding clamping applications



CLIPS AND CLAMPS

Common Causes of Failure in Truck Wiring and Lighting

Retrieved from Grote Lighting Systems Catalog 2016 pages 158-159



VIBRATION

Broken lamp filaments are one of the most common problems caused by vibration, but they also can lead to the abrasion of mating surfaces, which cause connectors and splices to fail. To minimize vibration problems, make certain that all wires and connectors are secured appropriately. Always secure the wiring as it exits the connector. Use cushioned mountings for lamps in applications where vibration is excessive.

MOISTURE AND CORROSION

Condensed water droplets inside a lens or corrosion around a lamp socket are sure signs that moisture has penetrated the system. Water can enter the system through ineffective wire seals, unprotected splices, unsealed crimps and connectors and non-mating seals. When making repairs, don't replace a sealed system with unsealed components. Make certain that connector seals are in place and undamaged. Inspect them carefully for cuts, tears and punctures.

CHEMICAL DAMAGE

Continuous exposure to many of the common chemicals found in and around trucks can cause plastics to swell, crack, soften or otherwise become degraded. Diesel fuel and hot engine oil are the main culprits. To minimize the effects of chemicals, inspect the wiring for signs of degradation. If it is occurring in an area that is generally free of contamination, check for leaky hoses, gaskets or fittings and repair if damaged or leaking. To avoid damage from chemicals, don't run wiring in areas where the chance for continuous exposure is likely, such as under fuel lines and filters.

ABRASION

Abrasion occurs when wires or wire wraps are allowed to run against frame members or other abrasive surfaces. Once the insulation is worn away, bare conductors may contact a ground surface and create a grounded circuit. Or, it could cause wear to the point of fracture resulting in an open circuit. Using the proper routing and coverings will help to prevent wear areas and abrasive damage. Worn coverings such as loom, convoluted tubing or spiral wrap should be replaced if they are no longer providing sufficient protection for the wires inside.

EXTREME TEMP

A variety of conditions lead to extreme temperature build-up that can damage lighting and wiring. These include leaving a trailer's tail lights on when the trailer is backed up to a dock and airflow around the lights is prohibited. When lights have been damaged from heat buildup, the lenses are often bubbled and misshapen. Where extreme temperatures can't be avoided, special heat-resistant wires and materials should be used.

IMPACT

Lighting and wiring must be protected from the impact of rocks, gravel and other road debris. A major impact can cause enough damage to require extensive repairs. Smaller, more frequent impacts over time may deliver equally extensive damage. Damage from impacts can cause problems although the wires are contained in a loom or other covering. During inspection, always check for damage from impacts and replace any wiring or lights that appear to be damaged. Make certain that the replacement parts are equivalent to or better than the original.

FLEXING

Wiring in a truck often must make sharp turns around corners, as well as subjected to constant flexing where doors or hoods are opened and closed repeatedly. To prevent wire damage from repeated flexing, avoid tight radius turns. Make sure that the wire is not snagged or stressed at its maximum extension. Also, make certain that the wire moves smoothly through its flexing cycle and doesn't rub or scrape against adjacent components.

TENSILE LOADS

Wiring should not be considered an appropriate load-bearing component. It's easy to exceed the designed load limit by inadvertently installing wires under tension or snagging a section of wire on one of the moving parts. Using a wire bundle as a handhold or step can destroy the integrity of the conductor and its connections. So can the weight of accumulated ice, snow, mud and other materials. Each of these points must be considered carefully when routing wires in a wiring harness.

GRIT AND SAND

Accumulation of abrasive materials can lead to damage, especially when combined with vibration. If gritty materials enter connections, they can accelerate the wear on contact points causing interruption of the circuit and failure of devices. Sand and grit also can attract and hold moisture, creating conditions conducive to corrosion. In some cases, sand and grit may work their way inside protective coverings and abrade the insulation of wires running through them if there is relative motion between the covering and the wire. One of the ways of reducing sand and grit buildup is to eliminate abrasive materials in the areas where wiring is present. Another way is to seal openings on protective coverings to keep gritty materials from entering.



VEHICLE ACCESSORIES

Power Points	100, 103
USB Chargers	100-101
Socket Panels	101-102
Meters	101-102
AC Inlet Port Plug	102
Back-Up Alarms	104
Horns	104
Buzzers	104



POWER POINTS |

Fully Assembled Panel

Stock No. 78033

(Blue Sea No. 4356)

Easy to install pre-wired BelowDeck™ panel includes:

- 2.1A Dual USB Charger – **Stock No. 78035**
- 12V Dash Socket – **Stock No. 78036**
- Mini OLED Meter Voltage – **Stock No. 78039**
- Illuminated Carling Technologies 15A circuit breaker switch allows the ability to shut off panel preventing parasitic draw
- Offers customizable 12V charging and monitoring options



12V



Dual 2.1A USB Port Output Power Point

Stock No. 11017

- Suitable for tablets, smartphones, and other devices
- Self closing spring cap
- For use in marine, utility vehicles, golf carts and construction vehicles
- Output: 2.1 amps per port

12V



Fast Charge Dual USB Charger

Stock No. 78041

(Blue Sea Stock No. 1039)

NEW

- Intelligent device recognition allows for rapid charging of phones, tablets, or other mobile devices
- Internal filtering for reduced electronic interference
- Mounts in a common 1½" hole

12-24V



Dual USB Charger Socket w/LED

Stock No. 78035

(Blue Sea No. 1016)

- Made with corrosion resistant materials which ensure a solid contact and low voltage drop
- Protective dust cap with tether keeps dust and spray from shortening the life of the charger
- Conformal coated circuit board to stand up to the harsh marine environment
- Output: 2.1 amps per port

9-32V



Fast Charging Dual USB Socket

Stock No. 78037

(Blue Sea No. 1045)

- Intelligent device recognition allows rapid charging of phones, tablets, or other mobile devices
- Charges at the speed required by specific devices
- Mounts in a common 1½" hole (29 mm)
- Output: 2.4 amps per port

9-32V



Dual USB Port Charger

Stock No. 11018

- Dual USB charging ports
- 10,000 operating cycles per port
- Typical Applications: On/Off-highway equipment, golf carts, lawn and garden equipment, marine, military
- Output: 3.15 amps for faster charging

12-24V



Dual USB Power Charger w/LED

Stock No. 11019

- Black nylon
- Waterproof sealing cap
- Output: 2 port USB 5V - 2.4A/2.4A

12-24V



Dual USB Power Charger

Stock No. 11021

- Allows you to charge two devices, charging and powered at once
- Can be mounted with or without face plate
- USB outlet and charger for automotive applications
- Ground tab: ¼" quick disconnect male tabs
- Output: 2.1 amps max per port

12-24V



Dual 2.1A USB Charger and 20A Power Receptacle

Stock No. 11014

- LED power indicator light for USB
- Water resistant cover protects against dust and water
- Insulated terminals included
- Output: 2.1 amps max per port

12-24V



POWER POINTS

LED Dual USB Power Charger

Stock No. 11013

- USB outlet and charger for automotive applications
- 1/4" quick disconnect male tabs
- Output: 2.1 amps max per port



LED USB Port with Protective Cap

NEW

12-24V
2.1A

- Works with standard phone charging protocols. May not work with some tablets or other devices
- USB outlet and charger for automotive applications
- Input rated: 12 or 24VDC
- Output: USB socket - 5 volt, 2.1A Max
- Ground tab: 1/4" quick disconnect male tabs
- Mounting hole: (29 mm) diameter
- Can be mounted with or without face plate **Stock No. 11057**

↑ 140°F (60°C)
↓ 32°F (0°C)

Charging Ports	Screw Mount Stock No.	Snap-In Mount Stock No.
Single	11052	11063
Dual	11053	11064



LED DIGITAL DC VOLTMETER

Stock No. 11054

- Monitors DC voltage
- 6-33VDC
- Mounting hole: (29 mm) diameter
- Surge protection up to 400W/35V
- Reverse polarity protection
- Ground tab: 1/4" quick disconnect male tabs

NEW

6-33VDC

↑ 140°F (60°C)
↓ 32°F (0°C)



LED DIGITAL AMP METER

Stock No. 11055

- Monitors DC amp range
- Measuring current range: 0-24A
- Mounting hole: (29 mm) diameter
- Reverse polarity protection
- Ground tab: 1/4" quick disconnect male tabs

NEW

0-24A

↑ 140°F (60°C)
↓ 32°F (0°C)



LED DIGITAL DC & AMP METER

Stock No. 11056

- Measuring current range: 0-24A
- 6-33 V DC
- Mounting hole: (29 mm) diameter
- Reverse polarity protection
- Ground tab: 1/4" quick disconnect male tabs

NEW

6-33VDC

0-24A

↑ 140°F (60°C)
↓ 32°F (0°C)



FLUSH MOUNT HOLE PANEL

NEW

- Accepts outlet sockets **Stock No. 11013, 11052, 11053, 11054, 11055, 11056, 11063 and 11064**
- Material: nylon (UL 94V-2)
- Mounting screws included

Cutouts	Stock No.
1	11057
2	11058
3	11059



Stock No. 11057



Stock No. 11058



Stock No. 11059

SURFACE MOUNT OUTLET SOCKET HOUSING

NEW

- Accepts outlet sockets, **Stock No. 11013, 11014, 11021, 11022, 11052, 11053, 11054, 11055 and 11056**
- Material: nylon (UL 94V-2)
- Mounting screws included

Cutouts	Stock No.
1	11060
2	11061
3	11062



Stock No. 11060



Stock No. 11061



Stock No. 11062

MINI OLED METER AMPS

Stock No. 78038

(Blue Sea No. 1732)

- Compact size enables mounting in any convenient location
- Reverse polarity protected
- Mounts in a common 1 1/8" (29 mm) dia. hole
- Monitors to 100ADC
- Positive or negative side wiring
- Input voltage range: 8-36VDC
- IP66 rating



MINI OLED METER VOLTAGE

Stock No. 78039

(Blue Sea No. 1733)

- Monitors DC voltage on a bright, waterproof, daylight readable OLED screen
- Reverse polarity protected
- Mounts in a common 1 1/8" (29 mm) dia. hole
- Input voltage range: 8-36VDC
- IP66 rating



MINI OLED TEMPERATURE MONITOR

Stock No. 78040

(Blue Sea No. 1741)

- Monitors essential electrical system parameters on a bright, waterproof, daylight readable OLED screen
- Compact size enables mounting in any convenient location
- Reverse polarity protected
- Mounts in a common 1 1/8" (29 mm) dia. hole
- Convenient temperature monitoring
- Measures in fahrenheit or celsius
- Accuracy: ± 1.25%
- Includes Blue Sea item #1821 Universal Temperature Sensor



(Blue Sea No. 1821)



AC INLET PORT PLUG

Stock No. 10343

- GCP1 AC Port Plug with 16" molded extension cable
- Advanced charge inlet device offers optimal flexibility and ease of installation
- Mounts to exterior of any vehicle to make charging accessible in a more convenient location
- Use with cordset blade devices

125V
13A



Stock No. 11035, 11037 and 10340



BLANK SOCKET PANEL



- Easy to install BelowDeck™ panels include a 15A circuit breaker switch and pre-wired harness
- Panels offer customizable 12V charging and monitoring options
- Pre-wired harness included in all panels for easy installation
- Illuminated Carling Technologies 15A circuit breaker switch allows the ability to shut off panel preventing parasitic draw
- Polycarbonate/ABS panel face is UV-stabilized, flame retardant, and will not corrode
- 12VDC only



Cutouts	Stock No.	Blue Sea Part No.
2	78032	4354
3	78034	4357

POWER POINTS |

Auxiliary power sources and accessories provide a power point for cellular phones, worklights, radios, air compressors, portable televisions, etc. Waytek offers both power points and plug adapters. Designed for use with any 12 volt vehicle including boats, motor homes, cars, trucks, snowmobiles and more.

Metal Power Source

- Integrated interior contact point
- 1/4" push on terminals
- Connects with Metri-Pack 56 Series **Stock No. 38003**, and female terminals on page 41
- Order parts separately

Housing **Stock No. 11010**
Cap **Stock No. 11011**



12V
30A

Plastic Power Source

Stock No. 11012

- Plastic power source with attached dust cap
- 1/4" push on terminals
- Mounting hole 1.09" dia. with max .078" thickness



12V
20A

All Weather Power Source

Stock No. 11015

- Compact all-weather power outlet
- Dependable source of power for electrical accessories using a standard adapter plug
- Includes spring loaded flip cover, mounting bracket and 12" power leads



12V
8A

Outlet Socket with Cap & Back Light

Stock No. 11022

- Waterproof sealing cap
- LED indicator light
- Ground tab: 1/4" quick disconnect male tabs



12V
20A

Dash Socket

Stock No. 78036

(Blue Sea No. 1011)

- Features watertight cap, easy installation, and twist locks securely with plug
- Designed to withstand the rigors of wet environments and constant vibration
- Cut out dimensions: 1 1/8" (29 mm) dia. hole



12V
15A

Dash Mount Receptacle Kit

Stock No. 11016

- Designed for under dash use
- Outlet can snap into mounting hole without bracket
- Kit includes adapter, lead wires with splice connector, mounting bracket, and hardware



12V
15A

Marine Grade Receptacle

Stock No. 11020

- Corrosion resistant marine grade materials
- Watertight sealing cap



12V
20A

Male Adapter Plug

Stock No. 11030

- Fits into power points or cigarette lighter
- Includes plug and two solderless terminals



12V
8A

Male Adapter Plug with 8' Cord

Stock No. 11031

- 8' of 20 ga wire
- New or rewiring applications



8A

BACK-UP ALARMS

- Medium duty
- 3' 18 ga wire lead connections
- Steam cleanable/pressure washable
- Meets State, Federal and U.S. Army Corps of Engineers' requirements
- CE & E-mark Certified for EMC
- Voltage spike and reverse polarity protected
- Compact size for horizontal or vertical mounting in protected areas



SAE
J1994-Type B



Stock No. 48019

- 107 db at 4'
- Compact Size: 4" W x 2.5" D x 3" H
- Mounting: 2 slots .5" L x .25" W and 2 slots .75" L x .25" W slots on 3.25" centers

SAE
J1994-Type C



Stock No. 48020

- 97 db at 4'
- Compact Size: 4" W x 1.25" D x 2.5" H
- Mounting: 4 slots .5" L x .25" W slots on 3.25" centers

BACK-UP ALARMS



12-24V
.2A@12V



Grommet Mounted 4" Backup Alarm

Stock No. 48023

- Mounts in standard 4" grommets
- 97 db
- Hard-wired UBS-bullet termination create sealed wiring connections
- Electronics encapsulated in potting for total circuit-board protection
- Grommet style mounting for added protection against damage and knock-offs from debris
- Material: Nylon

12-24V
.4A@12V



Stock No. 48024

- Medium and low noise surround back-up alarm with wire studs at 97 db
- Compact size for horizontal or vertical mounting
- UL approved
- Voltage spike and surge-protected
- Universal mounting bracket
- Self grounding, eliminating potential corrosion points
- Material: Nylon
- FMVSS: SAE J1994 Type C

HORNS

- Offered in the novel fanfare style for 12V and the mini-disc style for 24V
- Compact size for tight mounting conditions
- Mounting bracket included
- Corrosion resistant and waterproof
- Electrical contacts are standard 1/4" blade terminals
- .3165" dia. hole on fanfare styles

24V



Mini-Disc Horn

Stock No. 48062

- Low pitch (335 Hz)
- High pitch (435 Hz)

12V



Mini-Fanfare Horn

Stock No. 48054

- Low pitch (400 Hz)
- High pitch (500 Hz)

UNIVERSAL 12V DC BUZZER IMPACT-RESISTANT CASE

Stock No. 47630

- Universal buzzer for hundreds of uses, including door ajar warning, bus driver alert, low air pressure, temperature, and more
- Works with any temperature, pressure, door switch or momentary push button switch
- Electrical contacts are designed for instant response and uninterrupted signal
- Impact-resistant ABS resin case with moisture repellent insulator
- Two screw terminals with lock washers
- 1⁷/₃₂" L x 2¹/₂" W x 2¹⁷/₃₂" H



12V



BUZZER & RED LED PILOT LIGHT DUAL ALARM

Stock No. 47631

- Combination buzzer and pilot light
- Gives audible and visible alert
- Rugged design with metal body, red lens and long-life LED
- 1¹/₁₆" diameter mounting stem
- 1⁷/₈" L x 1" W x 1¹¹/₃₂" H body
- Universal application; use with any electrical switch



12V DC



LIGHTS

Indicator	106
Work	107, 111
Clearance/Marker	108-110
Flashers	108
Strobe	111
Interior & Compartment	111
Spotlights	112-113



INDICATOR LIGHTS

Metal LED Indicator Lights

- Watertight
- Mounting hole: 5/16"
- Includes 6" 18 ga wire leads



12V



Stock No.	Bulb Color
47662	Red
47664	Amber
47665	Green
47666	Blue

Snap-In Flush Panel Mount LED Indicator Lights

- Flush lens
- Mounting hole: 5/8"
- UL 94V-2
- 1/4" quick connect

12V



Stock No.	Bulb Color
47679	Red
47680	Amber
47681	Green

Bolt-On Panel Mount LED Indicator Lights

- Offers high intensity, wide angle reflector style optics for extreme viewing conditions
- Mounting hole: 1 1/16"
- Includes 6" 18 ga UL 1015 wire leads

12V



Stock No.	Bulb Color
47644	Red
47645	Amber
47646	Green
47647	Blue
47648	White

Pilot Light

Stock No. 47639

- Red 1/2" dia. faceted lens
- Mounting hole: 5/16"
- Snap out socket for convenient bulb replacement

12V



Plastic LED Indicator Lights

- Stove pipe lens for wider viewing angle
- Mounting hole: 1/2"
- Includes 6" 18 ga wire leads



12V



Stock No.	Bulb Color
47652	Red
47654	Amber
47655	Green
47656	Blue

Black Recessed Panel Mount LED Indicator Lights

- Recessed lens
- Mounting hole: 5/8"
- UL 94V-2

12V



Stock No.	Bulb Color
47682	Red
47683	Amber
47684	Green

Snap-In Mount LED Indicator Lights

- Dome lens
- Mounting style: snap-in
- Mounting hole: 5/16"
- Includes 6" UL 1007 24 ga wire leads

24V



Stock No.	Bulb Color
47669	Red
47670	Amber
47671	Green
47672	Blinking Red

Snap-In Panel LED Indicator Lights

- Snap-In panel light offers high intensity style optics for extreme viewing
- Mounting hole: 1/2"
- Includes 6" 18 ga. UL 1015 wire leads

12V



Stock No.	Bulb Color
47640	Red
47641	Amber
47642	Green
47643	Blue

Recessed Panel Mount LED Indicator Lights

- Recessed lens
- Mounting hole: 7/16"
- 1/4" quick connect

12V



Bulb Color	Silver Housing Stock No.	Black Housing Stock No.
Red	47673	47676
Amber	47674	47677
Green	47675	47678

Panel Mount LED Indicator Lights

- Dome lens
- Mounting hole: 5/16"
- Includes 5" UL 1015 22 ga wire leads

12V



Stock No.	Bulb Color
47685	Red
47686	Amber
47687	Green



Call 800-328-2724 for custom orders.

UTILITY & WORK LIGHTS

Sealed Work Light

Stock No. 47726

- Weatherproof sealed rubber housing
- 37,000 lumens
- 4½" dia., 3" D
- 5/16" dia. mounting stud
- Adjustable bracket
- PAR 36

12V



Square LED Work Light

Stock No. 47955

- 10 LEDs
- 2,100 lumens
- Shatter proof polycarbonate lens
- Aluminum housing
- Blunt cut wire leads
- 4.7" W x 4.2" H x 3.2" D
- Stainless steel bracket and bolt

Maxxima

12-24V



Rectangular LED Work Light

Stock No. 47968

- 8 LEDs
- 2,150 lumens
- Black aluminum housing
- Mounting: 1" long 5/16" dia.
- 6.2" W x 3.8" H x 1.8" D

Maxxima

12-36V



Rectangular Heavy-Duty LED Work Light

Stock No. 47954

- 10 LEDs
- 1,800 lumens
- 6.3" W x 3.9" H x 1.8" D

Maxxima



BriteZone™ Work Lamps

- LED flood beam pattern
- Housing: black powder coated, die cast aluminum
- Weather resistant IP67
- High performance LEDs
- Low power consumption, EMC R10 approved
- SAE J2139

122°F (50°C)
22°F (-30°C)

Crote
The first name in vehicle safety systems



Stock No. 47978



Stock No. 47979



Stock No. 47981



Stock No. 47982

Stock No.	Description	Lumens
47978	4.5" Round	1600
47979	4.3" Square	1100
47981	6.3" x 2" Slim	1400
47982	2.8" Mini Square	775

LED Mini Flood Lamp

Stock No. 47956

- Polycarbonate lens
- Black powder-coated, die cast aluminum housing
- Efficiency: 103.9 lumens per watt
- SAE J2139

122°F (50°C)
22°F (-30°C)

Crote
The first name in vehicle safety systems

12-36V



- Light output lumens: 775 raw/360 instant on/350 effective (Effective light measured after 30 minute warm-up)

LED LICENSE ILLUMINATORS

- Hermetically sealed lamp prevents water intrusion
- .120" bullet connectors
- Indexed, snap-fit mounting to bracket
- SAE L

Crote
The first name in vehicle safety systems

12V



Gray
Stock No. 47776



Black
Stock No. 47775

LED CLEARANCE/MARKER LIGHTS

2.5" Sealed Round

- Red Lens **Stock No. 47766**
 Amber Lens **Stock No. 47765**
- Complies to FMVSS 108 standards
 - .70" deep
 - SAE J595



2" Sealed Round

- Red Lens **Stock No. 47762**
 Amber Lens **Stock No. 47763**
- Complies to FMVSS 108 standards
 - .68" deep
 - SAE J595



3/4" LED Round Mini Lights

- Red Lens **Stock No. 48003**
 Amber Lens **Stock No. 48004**
- Grommet for quick mounting
 - Meets P2PC requirements
 - 5 year manufacturer warranty
 - 2 18 ga wire 6" leads, bullet connector



FLASHERS

Flashers are offered in both mechanical and electronic styles, each in two and three pin configurations. The electronic flasher with no moving parts will outlast the mechanical flasher many times over.

Stock No. 42011

- 2 pin electronic
- 60 to 120 flashes per minute

12V



Stock No. 47974



- Direct plug-in replacement, no adapter required
- Flashes at twice the normal speed to indicate lamp outage, and features an audible click when engaged
- 12.6A electronic flasher
- Flashes 2-4 bulbs

NEW

12V



Stock No. 42013



- 2-20A
- 3 Pins, Heavy-duty contacts
- 60-120 flashes per minute
- Molded base and terminals
- FMVSS: J945, J590

12V



Stock No. 42023

- 3 pin mechanical (550 style)
- 60 to 120 flashes per minute

12V



LED Flasher

Stock No. 47972

- Automatically adjusts to LED current
- Rated from 1 to 20 amps
- Comes with grounding wire

12V



Flasher

Stock No. 47973

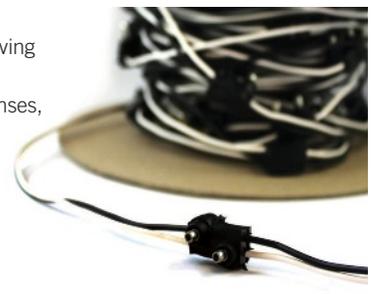
- 3 pin electronic
- LED and incandescent flasher
- For 300 watt, 12 volt
- SAE J945, SAE J590 and SAE1690

12V



2 PRONG PLUG CONNECTORS

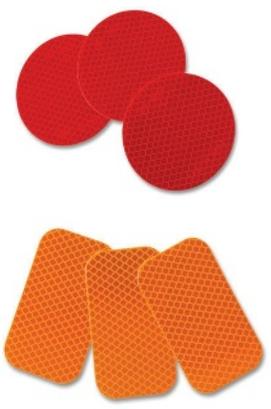
- 100 two prong plugs per spool
- Quickly and easily install a series of indicator lights for trailers
- Saves time and money by not having to individually wire each light
- Works with: 2.5" sealed round lenses, 2" sealed round lenses, double bulls-eye lenses, 4" rectangular lenses



Stock No.	Spacing
47716	6"
47717	10"
47718	12"

3M™ DIAMOND GRADE™ REFLECTORS

- Low profile-not easily knocked off and continues to function when damaged
- Meets and exceeds DOT and SAE-A requirements for reflex-reflectors
- Superior angularity beyond 60°
- Prismatic lenses in a durable transparent synthetic resin
- Pressure sensitive adhesive and clear poly liner



Stock No.	Description	Color
47794	3" Round	Red
47795	3" Round	Amber
47796	2" x 3.5" Rectangle	Red
47797	2" x 3.5" Rectangle	Amber

LED SUPERNOVA® STOP-TAIL-TURN LIGHTS

U.S. 40 Series 10 diode - 4" Round

- DOT SAE IST P2 00

Red Lens **Stock No. 47920**

Amber Lens **Stock No. 47921**

12V



Bracket **Stock No. 47944**

Grommet **Stock No. 47922**

Pigtail **Stock No. 47923**



U.S. 60 Series - 6.5" Oval

- DOT SAE I92 ST 97

Red Lens **Stock No. 47940**

12V



Amber Lens **Stock No. 47941**



Bracket **Stock No. 47924**

Grommet **Stock No. 47943**

Pigtail **Stock No. 47923**



SUPERNOVA® CLEARANCE/MARKER LED LIGHTS

U.S. 30 Series 2" Round

- DOT SAE P2

Red Lens **Stock No. 47910**

Amber Lens **Stock No. 47911**



Bracket **Stock No. 47913**

Grommet **Stock No. 47912**



Pigtail **Stock No. 47908**



U.S. 10 Series 2.5" Round

- DOT SAE P2 98

Red Lens **Stock No. 47905**

Amber Lens **Stock No. 47906**



Bracket **Stock No. 47909**

Grommet **Stock No. 47907**



Pigtail **Stock No. 47908**



U.S. 15 Series 2.5" Rectangle

- SAE P2

Red Lens **Stock No. 47935**

Amber Lens **Stock No. 47936**



Bracket **Stock No. 47937**

- Includes a pigtail plug



U.S. 19 Series 3.78" Rectangle

- SAE P2

Red Lens **Stock No. 47925**

Amber Lens **Stock No. 47926**



Bracket **Stock No. 47928**

Pigtail **Stock No. 47927**



Thin-Line - 3" Center

- No bracket required
- SAE P2

Red Lens **Stock No. 47950**

Amber Lens **Stock No. 47951**



Pigtail **Stock No. 47952**

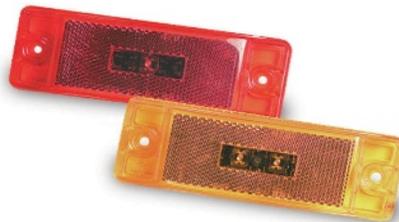


Sealed Turtleback® II - 6" Rectangle

- SAE P2 A PC

Red Lens **Stock No. 47960**

Amber Lens **Stock No. 47961**



Pigtail **Stock No. 47962**



Accessories

Adapter Plug **Stock No. 47970**

- For use with U.S. 40 and 60 Series female pin to male pin lamp termination



LIGHTS |

Universal Mount

Stock No. 47764

- 3 Stud mount
- Stop-tail: 16 LEDs
- Back-up: 18 LEDs
- License: 4 LEDs
- Pigtail included
- 2.8" deep
- 12" Rear pigtail harness included
- SAE L



12V

4" Stop-Tail-Turn Light

Red Lens Stock No. 47768

- 10 super flux LED diodes
- Sonically sealed lens and housing
- Complies to FMVSS 108 standards
- 2" deep
- SAE ST T2



12V

Mounting Accessories for 4" Round Lights

Pigtail Stock No. 47723

Grommet Stock No. 47722

Bracket Stock No. 47724



4" Stop-Tail-Turn Light Kit

Red Lens Stock No. 47990

Amber Lens Stock No. 47991

- Impact resistant plastic housing
- Includes light, grommet and pigtail
- 7 LED diodes
- SAE I6 S2 T2



6" Oval Dual LED Stop-Tail-Turn & Back-Up Light



Stock No. 47939

- 16 LEDs (10 white, 6 red)
- 8.17" x 3.82" oval size
- 100,000 hour rated LED life
- Standard 2-hole flange mount
- Requires 2 pigtail connectors
- Stock No. 47998
- SAE ST4 RT



6" Oval Dual LED Stop-Tail-Turn & Back-Up Light



Stock No. 47945

- Two-in-one oval LED stop-tail-turn light with integrated back-up lamp
- Leaves more room on vehicles for other controls like lift gates and grab rails
- Requires 2 pigtail connectors
- Stock No. 47998
- SAE IST Q2



6.5" Sealed Mid-Trailer Turn Signal

12V

Amber Lens Stock No. 47772

- Shock-proof mounted bulbs
- 9 super flux LED diodes
- Complies to FMVSS 108 standards
- 2.96" deep
- SAE QB



90° Pigtail

Stock No. 47998

- 3 contact plug tin plated brass
- 9" - 18 ga GPT wire leads



6" Sealed Oval Stop-Tail-Turn

- 10 super flux LED diodes
- Sonically sealed lens and housing
- Complies to FMVSS 108 standards
- 1.93" deep
- SAE ST QB

12V



- Kit includes: light, grommet and pigtail



	Light Stock No.	Kit Stock No.
Red	47773	47983
Amber	47771	47994

Accessories

Grommet Stock No. 47743

Bracket Stock No. 47744

Straight Pigtail Stock No. 47723

BACK-UP LIGHTS |

4" LED Back-up Light

Stock No. 47984

- 18 diode sealed LED lamp
- SAE R

12V

Grommet Stock No. 47722

Pigtail Stock No. 47998



Oval LED White Back-up Light

Stock No. 47987

- Sealed impact resistant plastic housing
- 24 LED bulbs
- SAE R

12V

Grommet Stock No. 47743

Bracket Stock No. 47744

Pigtail Stock No. 47723 or 47998



STROBE LIGHTS

Mighty Mini-Strobe

Stock No. 47751

- 70 flashes per minute, 1½ joules
- Threaded screw on lens
- 3⅝"H, 5⅛" dia.
- Includes mounting hardware

12V
25A



LED Mighty Mini-Strobe

Stock No. 47947

- 90 flashes per minute
- Longer life than standard strobes
- 3¾"H, 6" dia.
- Includes mounting hardware
- Class III

12V
.15A



INTERIOR & COMPARTMENT LIGHTS



LED Overhead Dome Light

Stock No. 48010

- 24 LED's
- 100,000 hour rated life
- Touch capacitor switch (high/medium/low/off)
- 5 year warranty

12V



¾" White LED Courtesy Light

Stock No. 48011

- 3 SMD LED's
- 100,000 hour LED life
- Space saving design
- Grommet included for quick mounting

12V



LED FLEXIBLE STRIP INTERIOR LIGHT



- White LED strip lighting for cabs, compartments, cargo and work spaces
- Space saving low profile design
- Labor saving installation with easy 3M adhesive backing
- IP68 completely sealed moisture proof electronics to withstand harsh environments and high vibration applications

12.8V DC



Stock No.	LED Color	LEDs	Length	Low Amp Draw
47902	White	36	24"	710ma
47904	White	69	45"	1110ma

LED ENGINE COMPARTMENT LIGHT

Stock No. 48015



- 3 LED flood beam pattern
- 700 Lumens
- High temp glass lens
- Aluminum housing
- 5.9"W x 2.2"H x 0.9"D
- 2 hole surface
- 2 wire leads

300°F (149°C)

12V
1200mA

24V
570mA



Optional Swivel Mount Bracket
Stock No. 46016

LED Interior Courtesy Cargo Light

Stock No. 48012

- 12 extreme-flux LED's light output
- 100,000 hours rated life
- 185 lumens
- 5.8"W x 2.9"H x 0.7"D
- Surface mount design with 4 hidden screws

12V



LED RECHARGEABLE WORK LIGHT

Stock No. 10117

- Dual purpose spotlight or floodlight, hang from the car using magnet or hook on the end
- Includes charger, no cord
- Floodlight: 60 LED's, 120 lumens, lasts 4 hrs
- Spotlight: 6 LED's, 12 lumens, lasts 18 hrs
- 35,000+ hour life LEDs
- Chemical, moisture and impact resistant
- 14.3" long



POST-MOUNT HALOGEN SPOTLIGHTS |

100W

12V
7A



- 6" round high impact ABS plastic
- Chrome or black finish
- Head: 6.25"W x 6.1"H x 4.25"D
- 100 hours lamp life in a lamp with a polycarbonate lens that contains U.V. ray inhibitor
- 36" lead wire
- 245,000 candlepower
- Installation kits sold separately based on make, model and year of the vehicle

**Replaceable 100W
H3 bulb**
Stock No. 47858

Chrome Finish

Stock No.	Unity Stock No.	Bulb
48065	330CL	H3
48066	330GM	H3
48067	330V	H3
48075	203030	H3
48076	203031	H3

Black Finish

Stock No.	Unity Stock No.	Bulb
48069	94014-0002	H3
48070	94015-0002	H3
48071	210030-0002	H3
48072	210031-0002	H3
48077	205050-0002	H3
48079	206010-0002	H3
48080	206011-0002	H3
48081	210010-0002	H3
48083	211010-0002	H3
48084	211011-0002	H3
48085	211030-0002	H3
48086	211031-0002	H3

POST-MOUNT LED SPOTLIGHTS |

30W

12V
3A



- 6" round high impact PC/ABS plastic
- Chrome or black finish
- Head: 6.25"W x 6.1"H x 4.25"D
- LED lamp assembly with sealed, hard-coated polycarbonate lens
- 4° H x 4° V beam pattern
- 36" lead wire
- 215,000 candlepower
- 50,000 hours
- Installation kits sold separately based on make, model and year of the vehicle



Chrome Finish

Stock No.	Unity Stock No.	Bulb
48090	335CL	LED
48091	335GM	LED
48092	335V	LED
48099	201057	LED
48101	203037	LED

Black Finish

Stock No.	Unity Stock No.	Bulb
48064	335GM-0002	LED
48094	94018-0002	LED
48104	206016-0002	LED
48105	206017-0002	LED
48106	210016-0002	LED
48107	210017-0002	LED
48108	211016-0002	LED
48109	211017-0002	LED
48110	210036-0002	LED

ROOF MOUNT SPOTLIGHTS |

- 6" round high impact ABS plastic
- Chrome finish
- Head: 6.25" W x 6.1" H x 4.25" D

Stock No.	Unity Stock No.	Bulb	Watts	Candlepower	Hours	Replacement Bulb Stock No.
48068	380	H3	100	245,000	100	47858
48093	385	LED	30	215,000	50,000	----



Replaceable 100W H3 bulb
Stock No. 47858



KITS & REPLACEMENT HANDLE |

Installation Kits

Includes:

- Mounting bracket
- Gasket (when needed)
- Fasteners
- Trim pieces
- Drill bushings
- Template
- Complete instructions



Unity Spot Light Lamp Kit
Stock No. 48128
(Unity Stock No U-7682)



Unity Replacement Handle
Stock No. 48127
(Unity Stock No U-6701-0101)

Stock No.	Unity Stock No.
48150	184
48151	184RH
48152	189
48153	189RH
48154	243
48155	243RH
48156	248
48158	253
48160	254
48161	254RH
48163	256RH
48164	257

Stock No.	Unity Stock No.
48165	257RH
48166	258
48167	258RH
48168	259
48170	261
48171	261RH
48172	5556
48173	5557
48174	263
48175	263RH



Due to the vehicle specific nature of these products, please contact customer service at 800-328-2724 to ensure part accuracy.



UNITY® has manufactured top quality emergency and auxiliary lighting products for over 80 years, and the post-mount spotlights have been the choice of the majority of police, fire and utility departments for decades.

UNITY® post-mount spotlights are the only auxiliary lighting products that offer the convenience and safety of instant aimable light when and where you want it! The interior control handle with fingertip switch provides 360° continuous horizontal rotation and up to 120° vertical adjustment

UNITY® works closely with the OE vehicle manufacturers every year to ensure that their post-mount spotlights are available for today's new generation of police and fire/rescue vehicles, as well as passenger cars, light trucks, sport utility vehicles, and heavy-duty trucks. UNITY® post-mount spotlights are street legal, and are truly a bright idea for any vehicle.

Putting Our Relays to Work for OEMs, Guides Our Design Process

Retrieved from "Putting Our Relays to Work for OEMs, Guides Our Design Process", www.picker.com



Picker's PC7150 is a Maxi ISO Automotive Relay with a rating of 150 Amps at 14VDC and 25°C. When asked why anyone would need a 150 Amp relay we often respond; "they needed a bigger hammer"

THREE AVAILABLE CASE STYLES



Picker Components' PC7150 may be the only ISO Pluggable and PCB board mountable, 150 Amp 14VDC ISO Relay on the market and has proven capable in the most demanding environments. The challenges of the OEM application guided us in making improvements, which are now standard, in our PC7150 relay.

Innovations that allowed Picker's PC7150 to meet the requirements of the application:

- Braided copper wires from the "common" contact to the common pins are excellent conductors of electricity and heat so we replaced one braided copper wire with two.
- The two copper braids directly connecting the contact area to the forked common contact pin fosters excellent thermal and electrical conductivity. Thus we redesigned the Common Pin creating this single piece fork.

THE OEM APPLICATION:

As 150 Amp applications go, this design requirement was extreme. The OEM required a relay to replace a Triac to add a dynamic-braking feature to the motor control. The application was rigorous, drawing in-rush current exceeding 300 Amps; potentially repeating every few seconds in an extremely high-vibration, random-axis environment.

- Steady-State Current 75 Amps at 18 VDC
- 300 Amps of In-Rush
- Run Time can be in Excess of 30 Minutes
- High Vibration

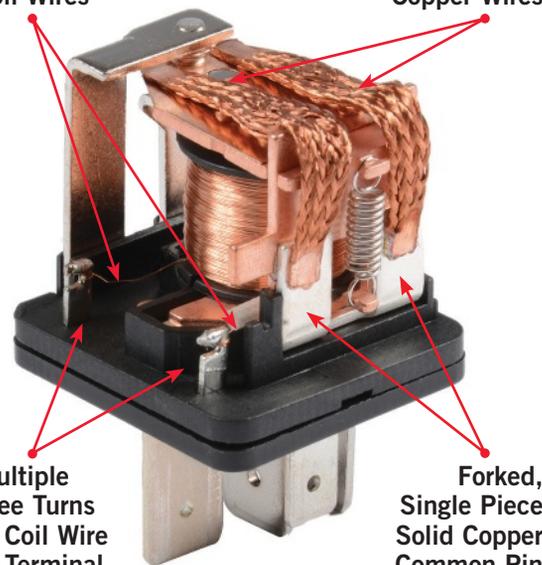
In short it generates a lot of heat!

Note: The essential design parameter and key to relay reliability is heat dissipation both internally away from the contacts to minimize the effects of the in-rush currents, and with external connections to a PCB to further dissipate heat. Both are essential to not exceed the temperature rating of the coil wire insulation and capable of the most demanding environments.

DESIGN ENHANCEMENTS MADE TO OUR STANDARD PC7150 150 AMP AUTOMOTIVE RELAY

Slack in Coil Wires

Two Braided Copper Wires



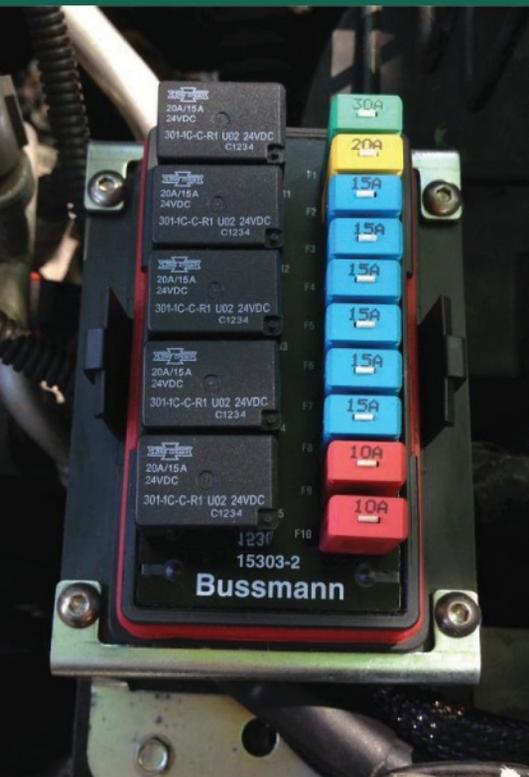
Multiple Free Turns in Coil Wire at Terminal

Forked, Single Piece Solid Copper Common Pin

Note: the Forked Pin which is an extension of the Common Pin as it exits the bottom of the package. This facilitates efficient heat and current flow.

RELAYS

High Power Automotive	116
Maxi	116-117
Mini	117-118
Micro	119
Micro & Mini Relay Connectors	120
Solid State Timer Relays	121
Contactors	122-124
Solenoids	124
Control Modules	125
Data Bus Throttle Series	125



RELAYS

- High quality automotive relays available with current carrying capacity of 10 to 150 amps
- Types stocked: power, mini, micro and ISO 280 relays
- All have push-on type terminals, except for power relays which have push-on terminals for coil circuit contacts and screw terminals for power circuit contacts
- SPDT is normally closed
- SPST is normally open

TE Connectivity Power Relays



Stock No.	TE Connectivity No.	Former Bosch No.	Volt Rating	Contact Action	Amp Rating NO	Notes
75551*	V23232-D0001-X001	0 332 002 150	12	SPST	75	Four terminals, dual contact
75552	V23232-A0001-X003	0 332 002 156	12	SPST	75	Four terminals with parallel and series diodes
NEW 75553	V23132-A2001-B200	----	12	SPST	130	Connects to coil via 1.5mm superseal connector
75561	V23232-E0002-X007	0 332 002 250	24	SPST	50	Four terminals, pre-contact
75563	V23232-A0002-X014	0 332 002 256	24	SPST	75**	Four terminals with parallel and series resistor

* This TYCO/BOSCH relay has a rating stamped on the cover that is based on switching 75A @ 100,000 cycles. However, this relay has a current switching ability up to 150A. Contact sales department for complete amp ratings and life cycle information. All power relays are bracket mount.

** Stamped 50 amp, but works up to 75 amp

Recommended Wire Sizes For All Relays

SAE Wire Size Gauge	Permissible Continuous Current (approximate values)	
	At 77°F (25°C) Amps	At 122°F (50°C) Amps
20	12	8
18	16	10
16	20	13
14	30	19
12	34	22
10	51	34
8	68	45
6	91	60
4	121	80

These values are to be used only as a guide.



Stock No. 75552

SONG CHUAN HIGH POWER AUTOMOTIVE RELAYS



The 409 series is specially designed to switch heavy-duty loads, and is ideal for bus and truck applications

- Compact dimensions: 67.5 x 90 x 58 mm and reduced coil power of only 4.8W
- Terminals contacts: two M8 studs and two M4 studs
- Contact voltage drop: 200mV at 200A
- Contact material: silver alloy

Stock No.	Circuitry	Amps Rating	Volt Rating	Notes
75590	SPNO	200	12	with Diode
75591	SPNO	200	12	with Resistor
75592	SPNO	200	24	with Diode

167°F (75°C)
-40°F (-40°C)



Stock No. 75590



Stock No. 75592



Stock No. 75591

MAXI RELAYS

- High current switching capability
- 1/4" and 3/8" blade terminals
- Ignition protected SAE 1171
- Lead free and RoHS compliant

257°F (125°C)
-40°F (-40°C)



Stock No.	Picker No.	Volt Rating	Contact Action	Amp Rating		Notes	Suggested Connectors
				NO	NC		
75645	PC795-1A-C-12C-DN-X	12	SPST	80	----	4 Terminals, Diode	75363, 75284
75649	PC795-1A-C-12S-RN-X	12	SPST	80	----	4 Terminals, Resistor	75363, 75284
75648	PC795-1A-C-2-12S-RN-X	12	SPST	80	----	4 Terminals, Metal Bracket, Resistor	75363, 75284
75650	PC795-1A-C-2-12S-N-X	12	SPST	80	----	4 Terminals, Metal Bracket	75363, 75284
75644	PC795-1C-C-12C-DNX	12	SPDT	80	60	5 Terminals, Diode	75284
75646	PC795-1C-C-12S-RN-X	12	SPDT	80	60	5 Terminals, Resistor	75284
75647	PC795-1C-C-2-12S-N-X	12	SPDT	80	60	5 Terminals, Metal Bracket	75284
75671	PC7150-1C-C-12C-N-X	12	SPDT	150	100	5 Terminals, Dust Cover	75284
75672	PC7150-1C-C-2-12C-N-X	12	SPDT	150	100	5 Terminals, Dust Cover, Metal Bracket	75284
75673	PC7150-1C-C-24C-N-X	24	SPDT	75	50	5 Terminals, Dust Cover	75284

Contact Ratings 14VDC at 25°C



Stock No. 75645



Stock No. 75672

See Connectors on page 120.

MAXI RELAYS

Song Chuan Maxi Relays



Stock No.	Song Chuan No.	Volt Rating	Contact Action	Amp Rating NO	Notes	Suggested Connector
75680	897-1AH-C-R1 U60	12	SPST	70	Two 3/8" terminals, two 1/4" terminals, resistor	75363, 75364
75681	897-1AH-C1S-R1 U60	12	SPDT	70	Two 3/8" terminals, two 1/4" terminals, resistor, bracket mount	75363, 75364
75682	897-1AH-C1S-002	12	SPST	70	Two 3/8" terminals, two 1/4" terminals, diode	75363
75683	897-1AH-C-R1-U03	12	SPNO	70	Two 3/8" terminals, two 1/4" terminals, no bracket, resistor	75363, 75364

All terminals are 1/4" unless specified otherwise

Hella Maxi Relays

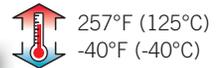


Stock No. 75360

Stock No.	Volt Rating	Contact Action	Amp Rating NO	Notes	Suggested Connector
75360	12	SPST	50	Two 3/8" terminals and two 1/4" terminals, resistor	75363

MINI RELAYS

TE Connectivity Mini Relays



Stock No.	TE Connectivity No.	Former Bosch No.	Volt Rating	Contact Action	Amp Rating*		Notes	Suggested Connector
					NO	NC		
75301	V23234-B0001-X001	0 332 019 103	12	SPST	50	---	Four terminals, resistor	75280, 75281, 75282
75302	V23234-B1001-X004	0 332 019 110	12	SPST	50	---	Four terminals, bracket mount, resistor	75281, 75282
75311	V23234-A0001-X032	0 332 209 137	12	SPDT	50	20	Five terminals, resistor	75280, 75281, 75282
75312	V23234-A1001-X033	0 332 209 138	12	SPDT	50	20	Five terminals, bracket mount, resistor	75281, 75282
75401*	V23234-C1001-X005	0 332 019 150	12	SPST	40	---	Five terminals, bracket mount	75281, 75282
75402*	V23234-C0001-X006	0 332 019 151	12	SPST	40	---	Five terminals	75280, 75281, 75282
75403*	V23234-C1001-X008	0 332 019 155	12	SPST	40	---	Five terminals, bracket mount, diode	75281, 75282
75411*	V23234-A1001-X036	0 332 209 150	12	SPDT	40	20	Five terminals, bracket mount	75281, 75282
75413*	V23234-A0001-X037	0 332 209 151	12	SPDT	40	20	Five terminals	75280, 75281, 75282
75414*	V23234-A0001-X042	0 332 209 159	12	SPDT	40	20	Five terminals, resistor	75280, 75281, 75282
75415*	V23234-A1001-X043	0 332 209 161	12	SPDT	40	20	Five terminals, bracket mount, resistor	75281, 75282
75325	V23234-A0004-X055	0 332 209 211	24	SPDT	20	10	Five terminals	75280, 75281, 75282
75326	V23234-A1004-X050	0 332 209 203	24	SPDT	20	10	Five terminals, bracket mount	75281, 75282
75327	V23234-A0004-X051	0 332 209 204	24	SPDT	20	10	Five terminals, diode	75280, 75281, 75282

* The TYCO/BOSCH relays have a rating stamped on the cover that is based on switching 30 amps for over 250,000 cycles. However, these relays can also switch 40 amps for over 100,000 cycles. Contact sales department for complete amp ratings and life cycle information.



Stock No. 75411



Stock No. 75413

Song Chuan Mini Relays



Stock No.	Song Chuan No.	Volt Rating	Contact Action	Amp Rating		Notes	Suggested Connector
			NO		NC		
75604	896H-1CH-D1SW-R1 U30	12	SPDT	50	30	Five terminals, skirted, resistor	75610, 75612
75690	896H-1CH-C1-R1-U45	12	SPDT	50	30	Five terminals, bracket mount, resistor	75281, 75282
75700	896H-1AH-C	12	SPST	50	---	Four terminals	75280, 75281, 75282
75701	896H-1AH-C-R1	12	SPST	50	---	Four terminals, resistor	75280, 75281, 75282
75705	896H-1CH-C	12	SPDT	50	30	Five terminals	75280, 75281, 75282
75706	896H-1CH-CR1	12	SPDT	50	30	Five terminals, resistor	75280, 75281, 75282
75711	896H-1AH-C1S-R1	12	SPST	50	---	Four terminals, bracket mount, resistor	75281, 75282
75715	896H-1CH-C1S	12	SPDT	50	30	Five terminals, bracket mount	75281, 75282
75716	896H-1CH-C1S-R1	12	SPDT	50	30	Five terminals, bracket mount, resistor	75281, 75282
75685	896H-1CH-D1SW-R1 24VDC	24	SPDT	20	---	Five terminals, steel bracket, dust cover	75363, 75304

All terminals are 1/4" unless specified otherwise



Stock No. 75706



Stock No. 75715

Hella Mini Relays



Stock No.	Volt Rating	Contact Action	Amp Rating		Notes	Suggested Connector
			NO	NC		
75601	12	SPDT	40	20	Five 1/4" terminals, skirted, resistor	75610
75602	12	SPDT	40	20	Five 1/4" terminals, resistor	75280, 75281
75605	12	SPDT	40	20	Five 1/4" terminals, skirted, bracket mount, resistor	75610



Stock No. 75601 Stock No. 75602



Stock No. 75600

- Mounting bracket for Stock No. 75601

See Connectors on page 120.

Highest Reliability In Automotive Relays

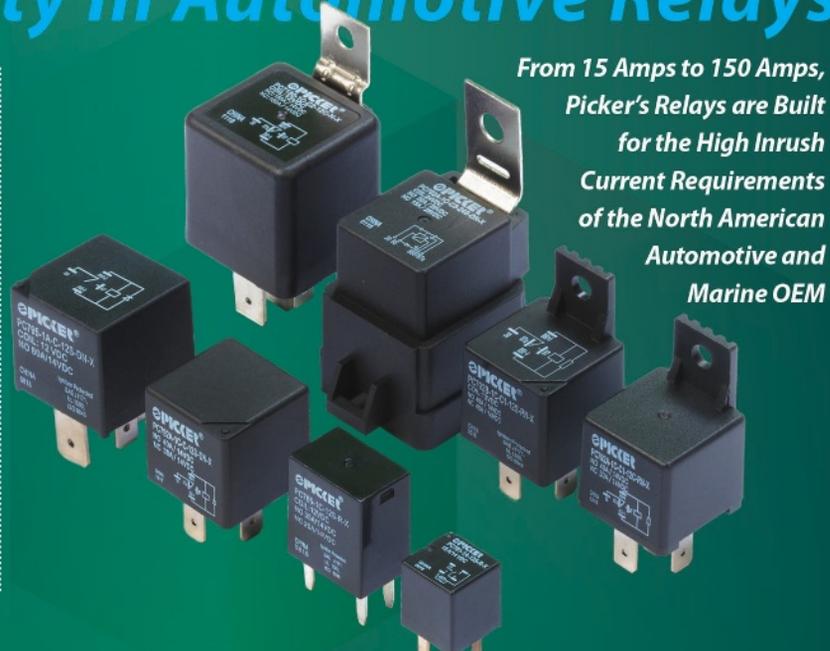
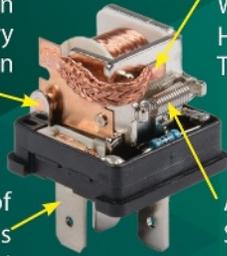
PC792A - A Better Relay 40/30 Amp Mini ISO Relay

AgSnO₂ Contacts Alloyed In Japan To Our Proprietary Formulation

Braided Copper Wire To Dissipate Heat Away From The Contacts

All Surfaces of The Terminals Are Nickel Plated

A Physical Spring For Greater Normally Closed Contact Pressure



From 15 Amps to 150 Amps, Picker's Relays are Built for the High Inrush Current Requirements of the North American Automotive and Marine OEM

What Sets Picker Apart

- Picker's Oversized Contacts are Alloyed in Japan to our Superior Proprietary Formulation
- Ignition Protection to SAE J1171, ISO 8846 and UL 1500 for Sealed Relays for Marine and Combustible Fuel Applications
- Automated Production for Enhanced Reliability and Consistency

PICKER
www.waytekwire.com/picker
"The Relay Experts, Building Better Relays"

PICKER MINI RELAYS |



Stock No. 75629



Stock No. 75620

Stock No.	Picker No.	Volt Rating	Contact Action	Amp Rating		Notes	Suggested Connectors
				NO	NC		
75632	PC792C-1A-C-12C-N-X	12	SPST	50	----	4 Terminals	75280, 75281
75630	PC792C-1A-C-12C-RN-X	12	SPST	50	----	4 Terminals, Resistor	75280, 75281
75631	PC792C-1A-C1-12C-N-X	12	SPST	50	----	4 Terminals, Bracket	75280, 75281
75629	PC792C-1A-C1-12C-RN-X	12	SPST	50	----	4 Terminals, Bracket, Resistor	75280, 75281
75636	PC792C-1AA-C-12S-N-X	12	----	2 x 20	----	5 Terminals	75280, 75281
75635	PC792C-1AA-C1-12S-N-X	12	----	2 x 20	----	5 Terminals, Bracket	75280, 75281
75637	PC792C-1AA-C1-12S-DN-X	12	----	2 x 20	----	5 Terminals, Bracket, Diode	75280, 75281
75628	PC792C-1C-C-12S-N-X	12	SPDT	50	40	5 Terminals	75280, 75281
75627	PC792C-1C-C1-12S-N-X	12	SPDT	50	40	5 Terminals, Bracket	75280, 75281
75626	PC792C-1C-C-12S-RN-X	12	SPDT	50	40	5 Terminals, Resistor	75280, 75281
75625	PC792C-1C-C1-12S-RN-X	12	SPDT	50	40	5 Terminals, Bracket, Resistor	75280, 75281
75622	PC792C-1C-CA-12C-DNX	12	SPDT	50	40	5 Terminals, Bracket, Diode	75280, 75281
75617	PC792A-1C-C-12S-N-X	12	SPDT	40	30	5 Terminals,	75280, 75281
75616	PC792A-1C-C-12S-RN-X	12	SPDT	40	30	5 Terminals, Resistor	75280, 75281
75619	PC792A-1C-C-12S-DN-X	12	SPDT	40	30	5 Terminals, Diode	75280, 75281
75623	PC792A-1C-C1-12S-N-X	12	SPDT	40	30	5 Terminals, Bracket	75280, 75281
75620	PC792A-1C-C1-12S-RNX	12	SPDT	40	30	5 Terminals, Bracket, Resistor	75280, 75281
75621	PC792A-1C-C1-12S-DN-X	12	SPDT	40	30	5 Terminals, Bracket, Diode	75280, 75281
75633	PC792A-1C-C3-12S-DNX	12	SPDT	40	30	5 Terminals, Skirted, Diode	75610, 75612
75615	PC792A-1C-C3-12S-RN-X	12	SPDT	40	30	5 Terminals, Metal Bracket, Resistor, Skirted	75610, 75612
75642	PC792C-1C-C-24S-N-X	24	SPDT	25	20	5 Terminals	75280, 75281
75643	PC792C-1C-C-24S-DN-X	24	SPDT	25	20	5 Terminals, Diode	75280, 75281
75641	PC792C-1C-C1-24S-N-X	24	SPDT	25	20	5 Terminals, Bracket	75280, 75281

Contact Ratings 14VDC at 25°C, 1/4" Nickel Plated Terminals

See Connectors on page 120.

MICRO RELAYS



Stock No. 75667



Stock No. 75530



Stock No. 75723

Stock No.	Picker No.	Volt Rating	Contact Action	Amp Rating		Notes
				NO	NC	
75665*	PC782-1A-12S-R-X	12	SPST	30	20	4 Terminals, Resistor, Sealed Case
75667	PC782-1C-12S-X	12	SPDT	30	25	5 Terminals, Sealed Case
75668	PC782-1C-12S-R-X	12	SPDT	30	25	5 Terminals, Resistor, Sealed Case
75669	PC782-1C-12S-D-X	12	SPDT	30	25	5 Terminals, Diode, Sealed Case

* Two $\frac{3}{16}$ " terminals, two $\frac{1}{4}$ " terminals



Stock No.	TE Connectivity No.	Volt Rating	Contact Action	Amp Rating		Notes	Suggested Connector
				NO	NC		
75530	V23374-A1601-X003	12	SPST	30	---	4 Terminals, Resistor	75290, 75292



Stock No.	Song Chuan No.	Volt Rating	Contact Action	Amp Rating		Notes	Suggested Connector
				NO	NC		
75720	871-1A-S	12	SPST	35	---	4 Terminals	75290, 75292
75721	871-1A-S-R1	12	SPST	35	---	4 Terminals, Resistor	75290, 75292
75722	871-1A-C-D1	12	SPST	35	---	4 Terminals, Diode	75290, 75292
75723	871-1C-C	12	SPDT	35	20	5 Terminals	75290, 75292
75724	871-1C-C-R1	12	SPDT	35	20	5 Terminals, Resistor	75290, 75292
75725	871-1C-C-D1	12	SPDT	35	20	5 Terminals Diode	75290, 75292
NEW 75726	871-1C-S-R1	12	SPDT	35	20	5 Terminals, Resistor	75290, 75292



ISO 280 MINI RELAYS



Stock No. 75740



Stock No.	Song Chuan No.	Volt Rating	Contact Action	Amp Rating		Notes
				NO	NC	
NEW 75717	898H-1AH-C-001	12	SPST	50	---	4 Terminals, Diode
75740	898H-1AH-C-R1	12	SPST	50	---	4 Terminals, Resistor
NEW 75657	896H-1CH-D-002	12	SPDT	50	30	5 Terminals, Sealed, Diode
75695	896H-1CH-C-R1-U24	12	SPDT	50	30	5 Terminals, Resistor
75718	898H-1CH-C-001	12	SPDT	50	30	5 Terminals, Diode
75745	898H-1CH-C-R1	12	SPDT	50	30	5 Terminals, Resistor
NEW 75747	898H-1CH-D1SW-R1-U05	12	SPDT	50	30	5 Terminals, Bracket, Resistor



- Designed with 2.8mm terminals
- Can use with Rear Terminal Mini Fuse Panels and Power Distribution Relay Connectors

ISO 280 MICRO RELAYS



Stock No. 75659



Stock No. 75730



Stock No. 75750



Stock No.	Picker No.	Volt Rating	Contact Action	Amp Rating		Notes
				NO	NC	
75660	PC785-1A-12S-R-X	12	SPST	35	---	4 Terminals, Resistor
NEW 75663	PC785-1A-12C-D-X	12	SPST	35	---	4 Terminals, Diode
75662	PC785-1C-12C-D-X	12	SPDT	35	25	5 Terminals, Diode
75659	PC785-1C-12S-R-X	12	SPDT	35	25	5 Terminals, Resistor
75661	PC785-1C-24S-R-X	24	SPDT	17.5	12.5	5 Terminals, Resistor



Stock No.	Song Chuan No.	Volt Rating	Contact Action	Amp Rating		Notes
				NO	NC	
NEW 75727	301-1A-C-D1	12	SPST	35	---	4 Terminals, Diode
75730	301-1A-C-R1	12	SPST	35	---	4 Terminals, Resistor
75655	301-1C-C-D1	12	SPDT	35	20	5 Terminals, Diode
75735	301-1C-C-R1	12	SPDT	35	20	5 Terminals, Resistor
NEW 75739	301-1C-C-R1-U01	12	SPDT	35	20	5 Terminals, Resistor
75738	301-1C-C-R1-U02	24	SPDT	20	15	5 Terminals, Resistor



Low Profile ISO Micro Relays						
Stock No.	Song Chuan No.	Volt Rating	Contact Action	Amp Rating		Notes
				NO	NC	
NEW 75750	108-1AH-V-R1	12	SPST	25	---	4 Terminals, Resistor
75751	108-1AH-V-D1	12	SPST	25	---	4 Terminals, Diode

Cannot use with rear terminal mini fuse panels or power distribution relay connectors

ISO 280 ULTRA RELAYS



Stock No. 75736



Stock No.	Song Chuan No.	Volt Rating	Contact Action	Amp Rating		Notes
				NO	NC	
NEW 75728	303-1AH-C-D1	12	SPST	20	---	4 Terminals, Diode
75736	303-1AH-C-R1-U01-12V	12	SPST	20	---	4 Terminals, Resistor
75737	303-1AH-C-R1-U01-24V	24	SPST	20	---	4 Terminals, Resistor



Cannot use with rear terminal mini fuse panels or power distribution relay connectors

See Power Distribution on pages 174-190.

MICRO RELAY CONNECTORS

- Heat stabilized thermoplastic connectors for relays
- Terminals (when supplied with connector) are brass, tin plated
- Connectors for panel mounting can be stacked together



Stock No. 75290



Stock No. 75292

Stock No.	Connects To	Mounting	Terminals Required
75290	5 Pin Micro Relay	Panel	Three of 30075 & two of 31073
75292	5 Pin Micro Relay	PC Board	Included

ORDERING NOTES:
Terminals must be ordered separately unless shown as included.

MINI RELAY CONNECTORS



- Heat stabilized thermoplastic connectors for relays
- Terminals (when supplied with connector) are brass, bright tin plated
- Connectors for panel mounting can be stacked together

Stock No.	Connects To	Mounting	Terminals Required
75280	5 pin high capacity/standard	Panel	Four or five 1/4" push-ons
75281	5 pin high capacity/standard	Harness	Four or five 1/4" push-ons
75282	5 pin high capacity/standard	PC Board	Included
75285	5 pin high capacity/standard	Panel	Five 1/4" push-ons
75363	4 pin, two 3/8" terminals and two 1/4" terminals	Harness	Two 3/8" push-ons and Two 1/4" push-ons
75364	4 pin, two 3/8" terminals and two 1/4" terminals	PC Board	Two 3/8" push-ons and Two 1/4" push-ons
75610	5 pin, weatherproof 3-12 ga and 2-18 ga GXL 12" leads	Harness	Included
75611	5 pin high capacity/standard	Harness	Five 1/4" push-ons
75612	5 pin, weatherproof	Harness	Two of 31085

ORDERING NOTES:
Terminals must be ordered separately unless shown as included.
* Use Crimp Tool Stock No. 419



Stock No. 75280



Stock No. 75281



Stock No. 75282



Stock No. 75364



Stock No. 75610

- Same connector body as 75612



Stock No. 75612
(Delphi No. 12077993)

Terminal Chart

Stock No.	Size	Wire Ga.	Tool Guide
30075	3/16	20-16	#419
30090	3/16	20-18	#419
31085	1/4	16-14	#419
31090	1/4	16-14	#419
32074	1/4	12-10	#407
32090	1/4	20	#407
75362	3/8	12-10	#428



5 PIN HIGH CURRENT RELAY CONNECTOR (2) 1/4" & (3) 3/8"

- Component type: relay connectors
- Terminals required: three 3/8", two 1/4"

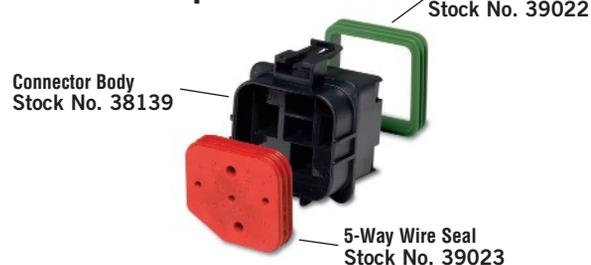


Stock No. 75284

Terminal Chart

Stock No.	Size	Wire Ga.
31073	1/4	16-14
75362	3/8	12-10
32074	1/4	12-10

Individual Components of 75612



Stock No.	Description	Delphi No.
38139	5 pin connector body	12065662
39022	Weatherproof seal	12065663
39023	5 way wire seal	12077994
Terminals Needed for 75612		
31085	16-14 ga terminal (2 needed)	12066614
32037	12 ga terminal (3 needed)	12033997

SOLID STATE TIMER RELAYS / VEHICLE CONTROL MODULES |

InPower's Vehicle Control Module (VCM) product line is a highly adaptable tool used to provide solutions for vehicle system applications. All VCMs employ a microprocessor controller coupled with a solid state 12 volt (or 24 volt) 15 amp power switch to provide a completely solid state smart relay. With a variety of module programs to choose from, we provide a wide range of functionality. Designers of vehicle electrical control systems can utilize VCMs to solve many problems in a simple and affordable manner.

Dual Inputs

- On-Delay - output is reset after input is deactivated
- Off-Delay - output is reset at time delay after the input is deactivated
- One-shot - when either input A or input B is activated, output is set for a time delay, will be timed on regardless of length of input activation

185°F (85°C)
-40°F (-40°C)

12V
15A



Stock No. 75532

On-Delay Stock No.	Off-Delay Stock No.	One-Shot Stock No.	Time
----	----	85532*	0-5 Seconds
75535	75540*	75545*	0-10 Seconds
75536	75541*	75546*	0-60 Seconds
85500*	85510*	----	0-1 Second
85502	----	85530	1 Second
85504	----	----	4 Seconds
----	85512	85534	5 Seconds
----	85514	----	10 Seconds
----	85516	85536	60 Seconds
----	85518*	----	0-2 Minutes
75537	75542*	75547*	0-3 Minutes
75538	75543*	75548*	0-10 Minutes
75539	75544*	75549*	0-60 Minutes
----	----	85538	2 Minutes
----	85520	----	3 Minutes
85506	85522	----	5 Minutes
85508	----	----	10 Minutes
----	85524	----	15 Minutes
----	85526	85540	20 Minutes
----	----	85542	30 Minutes
----	85528*	----	0-3 Hours
----	----	85544	4 Hours

* Adjustable Relay

Custom times available upon request – minimums apply

Dual Input Relay

- Activating either Input A or Input B sets output

Stock No.	Notes	Volts	Amps
75532	Dual Inputs	12	15

Latching Relays

- Activating either Input A or Input B alternately latches output

Stock No.	Notes	Volts	Amps
75533	Dual Inputs	12	15
75534	Dual Inputs	24	15

Connector
Stock No. 75610



INNOVATIVE ELECTRICAL SYSTEMS SOLUTIONS FOR WORK TRUCKS

Think Inside The Box For Your Out-Of-The Box Electronic Solutions



Think inside InPower's Toolbox of Solutions, where you'll find a wide range of out-of-the box solutions for all your electrical system needs, including:

- Engine Idle
- Vehicle Control Systems
- Load Management
- Smart Timers & Relay Controls
- Custom Controls

Call InPower for help in solving all your electrical system problems. Our innovative, cutting-edge solutions will help you meet today's demanding technological needs with out-of-the-box innovations for your work trucks.

InPOWER[®]
Electrical Systems Solutions

HIGH AMP REMOTE RELAYS



- Supports remote power switching applications that demand high continuous current passage, large inverter loads and high temp situations
- Designed for harsh weather, high shock, and vibration environments



High Amp Remote HD Relay

Stock No.	Contact Action	Amps	Volts
75515	SPST	300	12
75516	SPST	300	24

- Uses 6 position DTM connector
- Mates with **Stock No. 38627**

SOLID STATE DC CONTACTORS



- Low resistance
- Voltage spike protection for inductive loads

Max Temperature
110°F (43°C)

7.5-20V



Stock No.	Max Current Type A Mounting	Max Current Type B Mounting
44401	100A	75A
44402	150A	100A
44403	200A	125A

Type A Mounting: Aluminum plate 0.125"x16"x16" or larger
Type B Mounting: wood, plastic or air

HERMETICALLY SEALED CONTACTOR



- Gas filled hermetic chamber protects key components
- Exceeds IP69K standards
- M10 x 1.5 studs

390°F (200°C)

Stock No.	Volts	Amp
77060	12	200
77061	24	200
77065	12	400
77066	24	400
77070	12	500
77071	24	500
77075	12	600
77076	24	600



STANDARD SOLID-STATE RELAY



Stock No. 77012

- 9V-31VDC electronic solenoid
- Completely sealed
- 175A intermittent

185°F (85°C)
-40°F (-40°C)

9-31V

85A



SAE SEALED CONNECTORS



DUAL COIL CONTACTORS

NEW

- Designed to meet UL 1604
- Exceeds IP69K standards
- SAE J1171

400A



390°F (200°C)

Stock No.	Volts	Notes
77100	12/24	SPST - Normally Open Contactors
77101	12/24	with Auxiliary
77103	24	Extended Performance Contactor
77104	24	Extended Performance Contactor Seal with Auxiliary



- Shielded from all outside environmental factors such as: humidity, submersion, dust, high temperature, heavy shock and vibration
- Coil suppression built in
- SAE J1171 Contactors
- Exceeds IP69K standards
- M8 x 1.25 Studs

Stock No.	Volts	Amp
77089	12	150
77088*	12	225
77078	12	500
77079	24	500

* M10 x 1.5 studs



MOTOR REVERSING SOLENOID



Stock No. 77009

- Use for forward-reverse, up-down, left-right, open-close, in-out, motions and more
- Contact life cycles rating: 10,000 cycles @ 75A inductive
- Intermittent duty

12V



FORWARD & REVERSE RELAY MODULE



Stock No. 77010

- Rust and moisture-resistant plastic housing
- 70AMP at 12VDC intermittent, 50AMP at 12VDC continuous
- IP67

12V

185°F (85°C)
-40°F (-40°C)



Cover
Stock No. 77011



DC CONTACTORS | NEW

From the high amperage, submersible PowerSeal Family to the temperature and vibration challenging Defender Series, Trombetta provides robust and economical power solutions for a variety of applications. Trombetta DC Contactors meet the demands of mobile equipment used in extreme operating conditions and provide excellent shock and vibration resistance.

Bear Series

An economical solution to high-current switching applications.

Features & Benefits

- Battery management and emergency starting applications serving large machinery, transportation and portable vehicles with multi-battery systems
- 100% continuous duty



Stock No.	Amps	Peak Inrush	Volts
80400	225A	600A	12V
80401	225A	600A	24V
80402	225A	600A	36V
80403	225A	600A	48V

Defender Series

The Defender series is equipped with coil Transient Volt Suppression (TVS), a wide ranging current capability and a durable design making it the ideal choice for off-road and emergency equipment.

Features & Benefits

- Hermetically sealed to ensure reliable starting operation
- Designed to carry currents as low as 350 milliamps and as high as 200A



Stock No.	Amps	Peak Inrush	Volts
80420	200A	400A	12V
80421	100A	400A	24V

Reversing Polarity Family

Cost effective design consists of two DC contactors in a single housing unit creating easier product assembly and wire connection and reliable performance

Features & Benefits

- Ideal for reversing motions such as truck winches and tarp systems
- Resistant to dust and splash from oil, gasoline, antifreeze, etc.



Stock No.	Peak Inrush	Volts	Mounting Bracket
80410	500A	12V	Flat
80411	500A	12V	Bracket for Hose Clamp
80412	150A	24V	Flat
80413	150A	24V	Bracket for Hose Clamp

High Power Starter & Contactors

Plastic DC contactors are ideal for high volume, cost sensitive applications and are suitable for a variety of environmental conditions.

Features & Benefits

- Durable, high-temperature resistant plastic housing
- High temperature coil assembly and brass carrier for the moving contacts stand up under punishing cranking duty



Stock No.	Peak Inrush	Volts	Coil Configuration
80460	300A	12V	Grounded
80461	300A	12V	Non-Grounded
80450	400A	12V	Non-Grounded
80451	400A	24V	Non-Grounded

PowerSeal Family

Designed specifically for electrical vehicles requiring protection from tough environmental conditions, the PowerSeal family provides reliable power for electric pallet jacks, fork trucks, utility vehicles and more.

Features & Benefits

- PowerSeal family is rated at IP66 and IP67 and passes IEC 60529
- Current rating: 150A



Stock No.	Volts	Mounting Style	Coil Type
80430	12V	Flat-Mount	Intermittent
80431	12V	Curved L Bracket	Intermittent
80432	12V	Flat-Mount	Continuous
80433	24V	Flat-Mount	Continuous

Metal Housing Family

Built to provide consistent electrical performance in a variety of high current switching and pole configurations

- For use in applications from military vehicles and hydraulic controls, to stationary equipment

Features & Benefits

- Electromechanical devices utilize a metal casing to surround a DC contactor, which allows for higher applications ratings



Stock No.	Amps	Peak Inrush	Volts	Coil Type
80470	125A	600A	12V	Continuous
80471	125A	500A	24V	Continuous

MINI FACTOR SEALED CONTACTOR |

- Max continuous current carry; @ 149°F (65°C): 50A / @ 185°F (85°C): 25A
- Hermetically sealed contactor: ensures make/break switching up to 1200VDC



185°F (85°C)
 -40°F (-40°C)

Stock No.	Volts
77086	12
77087	24



DC POWER CONTACTORS |

- High current capacity
- Enclosed in dust-resistant case
- Four 5/16"-24 studs
- Isolated coil



122°F (50°C)
 -40°F (-40°C)

Stock No.	Volts	Amps	Inrush Amps
Continuous Isolated			
77030	6	80	300
77031	12	80	150
77032	24	50	50
77033	36	50	50
Continuous Wire Ground			
77038	24	50	50



Stock No. 77030

SOLENOIDS |

- Switch high electrical current when a much lower current is applied to its electromagnet coil
- #10-32 thread and 5/16"-24 thread copper terminals
- Hex nuts and lock washers included
- Insulated solenoids have studs that are electrically isolated from the housing
- Grounded solenoids have one of the studs internally connected to the housing



Stock No. 77002
Plated steel housing

Stock No. 77023
Typical weatherproof solenoid with plasticized steel housing

Continuous Solenoids					
Stock No.	Grounded/Insulated	Volt	Continuous Current Rating	Make/Break Amp Rating	Housing Type
77000	Grounded	12	85	85/85	Plated Steel
77001	Grounded	24	85	120/65	Plated Steel
77002	Insulated	12	85	85/85	Plated Steel
77003	Insulated	12	85	85/85	Weatherproof Plasticized Steel
77004	Insulated	24	85	120/65	Plated Steel
77025 Latching	Insulated	12	110	85/85	Plated Steel
77005*	Insulated	24	65	65/65	Weatherproof Plasticized Steel
77006	Insulated	12	85/35	85/35	Plated Steel
77007 High Current	Insulated	12	200	200	Plated Steel
77013**	Grounded	12	85	85/35	Plated Steel

* UL Marine & CE/ISO Listed ** DPDT for forward and reverse systems

Intermittent Solenoids					
Stock No.	Grounded/Insulated	Volt	Make/Break Amp Rating	Intermittent Time	Housing Type
77014	Grounded	12/24	750/100	10 sec.on-20 min off	Phenolic
77020	Grounded	12	750/100	10 sec.on-20 min off	Steel
77021	Grounded	12	750/100	10 sec.on-20 min off	Weatherproof Plasticized Steel
77022	Insulated	12	750/100	10 sec.on-20 min off	Steel
77023	Insulated	12	750/100	10 sec.on-20 min off	Weatherproof Plasticized Steel
77024	Insulated	24	120/65	10 sec.on-20 min off	Steel

DC POWER RELAY CONTACTORS |

- Continuous duty cycle
- Silver alloy contact material



Application

- Emergency vehicle accessories, golf cart controls, bus accessories, floor sweepers/scrubbers, handicap lifts, utility winches, marine, forklifts, lawn & garden equipment, diesel engines



Stock No. 75565-75566



Stock No. 75567-75576



Stock No. 75580-75586

Stock No.	Pole Form	Terminal Type	Volt DC	Normally Continuous	Open Inrush	Coil	Model No.	White Rodgers Part No.	Temp Range	Mounting
75565	SPNO	4	12	100	400	Isolated	120-901	120-105751	-20°F to 120°F	Coil terminals up or horizontal
75566	SPNO	4	15	100	400	Isolated	120-902	120-108751	-20°F to 120°F	Coil terminals up or horizontal
75567	SPNO	3	12	100	400	Continuous	124-906	120-106761	-40°F to 150°F	Vertical plane with coil terminals up
75568	SPNO	4	12	150	400	Grounded	124-902	124-105111	-40°F to 150°F	Vertical plane with coil terminals up
75570	SPDT	4	24	150	400	Isolated	124-903	124-114111	-40°F to 150°F	Vertical plane with coil terminals up
75572	SPNO	4	36	100	400	Isolated	124-904	124-117111	-40°F to 150°F	Vertical plane with coil terminals up
75573	SPNO	3	24	150	400	Grounded	124-907	124-114211	-40°F to 150°F	Vertical plane with coil terminals up
75574	SPDT	6	12	150	400	Isolated	124-910	124-305111	-40°F to 150°F	Vertical plane with coil terminals up
75576	SPDT	6	24	150	400	Isolated	124-911	124-314111	-40°F to 150°F	Vertical plane with coil terminals up
75580	SPNO	4	12	200	600	Isolated	586-902	586-105111	-40°F to 150°F	Vertical plane with coil terminals up
75581	SPNO	4	6	200	600	Isolated	586-901	586-102111	-40°F to 150°F	Vertical plane with coil terminals up
75583	SPNO	4	24	200	600	Isolated	586-905	586-114111	-40°F to 150°F	Vertical plane with coil terminals up
75584	SPNO	4	36	200	600	Isolated	586-906	586-117111	-40°F to 150°F	Vertical plane with coil terminals up
75586	SPDT	6	12	200	600	Isolated	586-911	586-305111	-40°F to 150°F	Vertical plane with coil terminals up

SOLID STATE ELECTRONIC CONTROL MODULES

NEW



Stock No. 80480

- Allows industrial work solenoids of any size to achieve intermittent forces equal to or exceeding much larger solenoids, making them a great choice for applications with high pull-in force requirements at long working strokes
- Electronic controls for solenoids regulate the magnitude of electrical drive applied to the coil during the pull-in and/or hold operation of the solenoid to optimize its performance
- Control modulates energy through Pulse Width Modulation (PWM) control of a single coil; thus, the performance benefit of 100% of the coil working at all times is achieved
- Built with an "auxiliary" termination point to allow for the wiring of a remote control to the control module
- Voltage input min. Max range: 10-32V
- Max power load: 1000 Watts
- Reverse polarity protection

185°F (85°C)
-4°F (-20°C)



12-24V

80A

Stock No. 80481

- Designed to work properly with either a two-section coil or a one section coil
- Enhance solenoid performance by increasing the force capability and reducing operating temperature
- Accepts 2-wire or 3-wire switched input (12 or 24V) by applying this voltage to the coil or coils
- Voltage input min. Max range: 8.5-32V
- Max power load: 1000 Watts
- Reverse polarity protection: withstands brief reverse polarity of battery inputs if properly used

185°F (85°C)
-22°F (-30°C)



12-24V

80A

J1939 CAN GATEWAY MODULE

NEW



Stock No. 80452

- Allows sending and receiving of communications between the 250 kbps bus and 500 kbps bus
- Power supply voltage: 8-32VDC
- Power supply current: 50 mA max @ 24VDC
- Current ratings: 24VDC
- Unit Connections:
 - Pin 1: + Battery
 - Pin 2: Ground
 - Pin 3: CAN H (250K bus)
 - Pin 4: CAN L (250K bus)
 - Pin 5: CAN H (500K bus)
 - Pin 6: CAN L (500K bus)



DATA BUS THROTTLE (DBT) SERIES

NEW



InPOWER's DBT series control modules provide high idle engine RPM control in a compact plug and play design. Each module offers adjustable RPM settings, engine signal output, and LED diagnostic status indicators. These control modules connect to your vehicle's OBD-11 diagnostic connector via a cable with a secondary OBD-11 connector for use with any other necessary OBD-11 access.

This easy-to-install, low-cost module provides your vehicle with high idle and power take-off (PTO) when and how it is needed.

Light-Duty Vehicle Throttle

- Supports Ford and Chevy light-duty vehicles
- Automatic charge protection and fixed speed mode
- Data link to engine controller ensure precise speed control, interlocking and operation of diagnostic LED indicators
- Adjusts pre-set RPM to between 900 and 2000 RPM
- PTO output: +12V @ 3A, set when module is activated



Stock No.	
85551	Ground Signal Activated
85552	12V Signal Activated

Medium-Duty Vehicle Throttle

Stock No. 88570

- Supports Ford, GM, and Cummins engines
- 3 adjustable RPM settings
- 2 remote PDM controls
- 6 engine signal outputs for any signal, such as park, reverse or vehicle speed
- Communication across CAN network



WHAT DO SPST - SPDT DPST - DPDT MEAN?



Retrieved from <http://www.littelfuse.com/technical-resources/technical-centers/commercial-vehicle-technical-center/poles-and-throws.aspx>

SP and DP refer to single pole and double pole, ST and DT refer to single throw and double throw.

POLE

Refers to the number of circuits controlled by the switch: SP switches control only one electrical circuit. DP switches control two independent circuits (and act like two identical switches that are mechanically linked). Do not confuse 'pole' with 'terminal'. The DPST switch, for example, has four terminals, but it is a DP, not a 4P switch.

THROW

Refers to the extreme position of the actuator: ST switches close a circuit at only one position. The other position of the handle is Off. DT switches close a circuit in the Up position, as well as the Down (frequently On-Off-On).

Single pole/throw and double pole/throw switches are by far the most common switches, but triple and quadruple configurations are also available. They are commonly denoted 3PST, 3PDT, 4PDT, etc.

SWITCH REFERENCE GUIDE - SPST, SPDT, DPST, DPDT

SP and DP refer to single pole and double pole, ST and DT refer to single throw and Double throw.

SP: Single Pole, one circuit controlled by the switch.

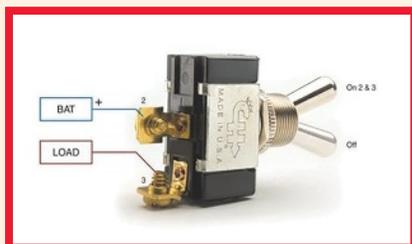
DP: Double Pole two independent circuits controlled by the switch which are mechanically linked.

Note: "Pole" should not be confused with "Terminal". The DPST switch, for example has four terminals however is a Double Pole (DP) and not a four pole (4P) switch.

ST: Single Throw, closes a circuit at only one position. The center position is off.

DT: Double Throw, closes a circuit in the up or down position (On-On). A Double Throw switch can also have a center position such as On-Off-On.

The following switch diagrams illustrate the most common types of toggle and rocker switch.



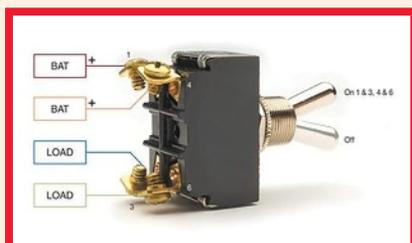
SPST On-Off



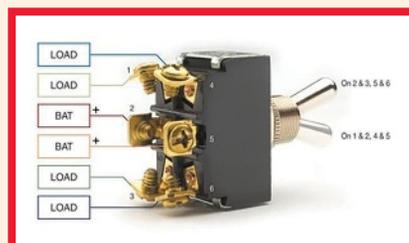
SPDT On-On
Only one of the loads can be energized at a time.



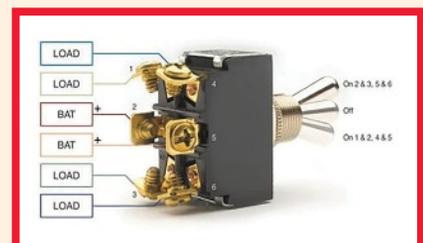
SPDT On-Off-On
Only one of the loads can be energized at a time.



DPST On-Off
Both load terminals can be energized at the same time. They are independent of each other and could be of different voltages.



DPDT On-On
Functions like two separate SPDT switches operated by the same actuator. Only two loads can be On at a time.



DPDT On-Off-On
Functions like two separate SPDT switches operated by the same actuator. Only two loads can be On at a time.

SWITCHES

Rocker Switches	128-133
Toggle Switches	134-137
Push Button Switches	138-139
Push-Pull Switches	139
Door Switches	139
Ignition Switches	140
Temperature Switches	141



CONTURA ROCKER SWITCHES |

- Modular design
- Switch bodies and snap-in actuators sold separately
- IP66 - IP68 – complete protection against dust and submersion when used with panel gasket **Stock No. 44380** on page 130



185°F (85°C)
-40°F (-40°C)



Upon request we can supply special circuit, identification and terminal combinations. Call 800-328-2724 for minimum quantities and lead times.

Environmentally Sealed



Lighted

Un-lit

Contoured Actuator

CIRCUIT TYPES |

SP Single Pole

A switch device that opens, closes or changes connection in a single conductor of an electrical circuit.

DP Double Pole

A switch device that opens, closes or changes connection between two conductors of an electrical circuit.

ST Single Throw

A switch that opens, closes or completes a circuit at only one of the extreme positions of its actuator.

DT Double Throw

A switch that opens, closes or completes a circuit at both extreme positions of its actuator.

TT Triple Throw

A switch that opens, closes or completes a circuit in three positions.



See Contura Rocker Switch Accessories on page 130.



CONTURA SWITCH BODIES |

- Select the switch body needed for your application
- Removable actuators in a variety of styles sold separately see page 129
- Easy installation: actuators snap onto switch body
- Lighted switches are incandescent, unless noted

**12V
20A**



Stock No. 44305



Stock No. 44307



Stock No. 44278

Boot for Contura Switches
Stock No. 44309



Switch Body Less Actuator				
Stock No.	Circuit	Type	1/4" Tab Contacts	Lighting
44278*	On - Off	SPST	**	one light
44301	On - Off	SPST	2	unlit
44302	(On) - Off	SPST	2	unlit
44305	On - Off	SPST	3	one light
44307*	On - Off	SPST	3	one light
44303	On - Off - On	SPDT	3	unlit
44304	(On) - Off - (On)	SPDT	3	unlit
44306	On - Off - On	SPDT	4	two lights
44321	On - Off	DPST	4	unlit
44322	(On) - Off	DPST	4	unlit
44325	On - Off	DPST	5	one light
44313*	On - Off - On	DPDT	7	two red
44323	On - Off - On	DPDT	6	unlit
44324	(On) - Off - (On)	DPDT	6	unlit
44329	On - None - On	DPDT	6	unlit
44326	On - Off - On	DPDT	7	two lights
44327	On - On - On	SPTT	6	unlit
44328	On - On - On	SPTT	8	one light

ORDERING NOTES:

1. Select switch body style.
2. Select actuator, with any options required.

* Super bright LED

** Includes 4 epoxy sealed 6" 14 ga SXL wire leads (On) = momentary on



CONTURA II SWITCH ACTUATORS

- Constructed of thermoplastic polycarbonate
- Offered with either a hard nylon overlay or a “soft-touch” elastomer overlay
- Aesthetic design of raised “bumps” on the top and bottom of the rocker
- Fits the Contura switch bodies on page 128



Contura II Switch Actuator				
Gray Stock No.	Black Stock No.	Red Stock No.	Lens Color	Material Type
44336	44351	44356	None	Soft
44337	44352	44357	Red	Soft
44338	44353	----	Amber	Soft
44339	44354	----	Green	Soft
44340	44355	----	2 Red Lenses	Soft
----	44371	----	Blue	Soft
44341	44361	44366	None	Hard
44342	44362	44367	Red	Hard
44343	44363	44368	Amber	Hard
44344	44364	----	Green	Hard
----	44365	44370	2 Red Lenses	Hard
----	44372	----	Blue	Hard

CONTURA III SWITCH ACTUATORS

- Constructed of thermoplastic polycarbonate
- Offered with either a hard nylon overlay or a “soft-touch” elastomer overlay
- Designed with three rows of bars on the top and bottom of the rocker
- Fits the Contura switch bodies on page 128



Contura III Switch Actuator			
Stock No.	Color	Lens Color	Material Type
44430	Black	None	Soft
44431	Black	Red	Soft
44432	Black	Amber	Soft
44433	Black	Green	Soft
44434	Black	2 Red Lenses	Soft
44440	Black	Blue	Soft
44442	Red	None	Soft
44435	Black	None	Hard
44436	Black	Red	Hard
44437	Black	Amber	Hard
44438	Black	Green	Hard
44439	Black	2 Red Lenses	Hard
44441	Black	Blue	Hard
44443	Red	None	Hard
44444	Red	Red	Hard

CONTURA IV SWITCH ACTUATORS

- Advanced stylish curve design
- Hard plastic actuators
- Fits the Contura switch bodies on page 128



Contura IV Switch Actuator	
Black Stock No.	Lens Color
44390	None
44394	2 Red Lenses

Contura Pre-Printed Actuators

- Customize Contura switches with pre-printed actuators
- Offered in a variety of standard automotive and marine markings
- For Contura II, Contura III and Contura IV hard material actuators only
- Custom design services also available

Actuator Removal Tool

Stock No. 44381

- Used to remove Contura II, Contura III and Contura IV actuators from switch body



Actuator Markings

Symbol	Symbol Meaning	Symbol	Symbol Meaning
	Light		Bilge Pump
	Horn		Bilge Blower
	Anchor Light		

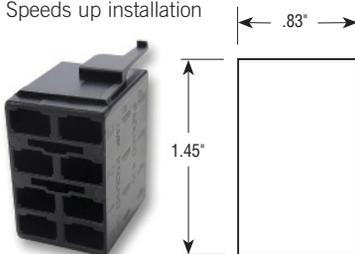


Special order only.
Call 800-328-2724
for pricing and
minimums.

Electrical Connector

Stock No. 44386

- Typically used with a wire harness assembly
- Speeds up installation



Mounting Hole

- For single switches .830" wide by 1.450" high
- Be sure to test cut a mounting hole in your actual material

Terminals

Wire Gauge	Stock No.	Packard No.	Reel Stock No.	Recommended Packard Tools
20-18	30090	12015869	30090R	408
16-14	31090	12015870	31090R	408
12	32090	12084590	32090R	407

- Special tooling needed for use of reels, not available from Waytek



V-SERIES CONTURA ROTARY SWITCHES |

- IP67 water/dust resistant
- Easy install: ¼" quick connect terminals

Stock No.	Circuit	Type	Lighting
44310	On - Off	SPST	Unlit
44312	On - Off	SPST	LED red
44311	On - Off - On	SPDT	LED green red green

12V
20A

24V
15A



Stock No. 44310



Stock No. 44311



Stock No. 44312

CONTURA ROCKER SWITCH ACCESSORIES |



Four panel configuration
with one switch shown

Single Mounting Panel

Stock No. 44382

- Used for a single switch mount along with the multiple panel for a consistent look
- 1.34" W x 2.30" H
- Mounting hole: .98" W x 1.90" H
- Be sure to test cut a hole in the actual panel material



Stock No. 44382

Mounting Panel Plug

Stock No. 44385

- Used to plug vacant switch locations
- .96" W x 1.91" H



Panel Gasket

Stock No. 44380

- Required for sealed panel applications
- Multiple gaskets are needed in some situations depending on the thickness of your panel



Mounting Panel End

Stock No. 44387

- 1.19" W x 2.30" H
- End unit reverses to fit either side of the middle unit

Mounting Panel Middle

Stock No. 44388

- Used where multiple switches can be installed with only one hole to cut in your panel
- 1.03" W x 2.30" H
- Mounting hole for two units: 2.03" W x 1.90" H
- Add 1.03" width for each additional unit



End Unit



Middle Unit

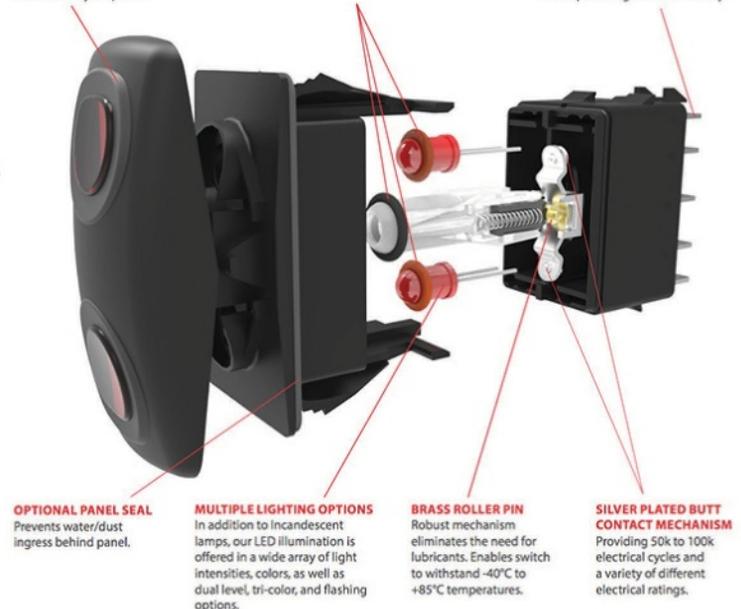
V-SERIES SEALED ROCKER SWITCHES

As a market leader in transportation application switches and control modules, Carling Technologies strives to bring you quality products at an economical price.

INTERCHANGEABLE ACTUATORS
 Panel redesign is a snap with our wide range of rocker styles. Achieve maximum design variety with minimum inventory. Simply swap rockers to create an entirely new look for your panel.

DUAL SEAL PROTECTION
 Seals out water, dust, debris, and enables switch certification to IP66 for front panel components.

CLEAN CONNECTIONS
 Options for both eight and ten terminal base styles with AMP & Packard compatible connectors affords myriad circuit options while providing ease of assembly.



OPTIONAL PANEL SEAL
 Prevents water/dust ingress behind panel.

MULTIPLE LIGHTING OPTIONS
 In addition to incandescent lamps, our LED illumination is offered in a wide array of light intensities, colors, as well as dual level, tri-color, and flashing options.

BRASS ROLLER PIN
 Robust mechanism eliminates the need for lubricants. Enables switch to withstand -40°C to +85°C temperatures.

SILVER PLATED BUTT CONTACT MECHANISM
 Providing 50k to 100k electrical cycles and a variety of different electrical ratings.

The V-Series Contura switches are well known for their cutting-edge design, high quality, maximum performance, and unmatched reliability.

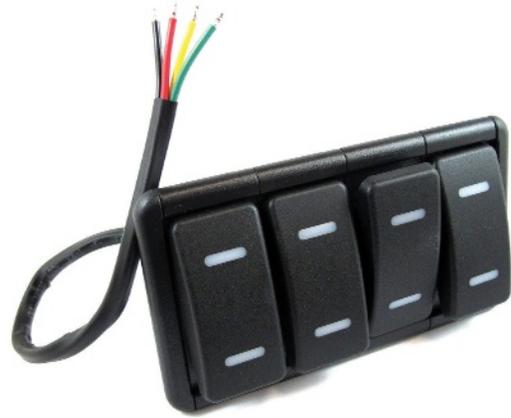
FEATURES:

- 1-2 poles
- Ratings: dry circuit up to 15A, 24VDC; 15A 125VAC; 10A 250VAC
- IP66/68 sealing protection above panel

CAN PROGRAMMABLE SWITCH |

- Programmable multi-color LED rocker switch module, designed to operate within a J1939 Controller Area Network (CAN)
- LED configuration, choose from 8-color palette
- Each LED can be configured with up to four unique system-status colors
- Interchangeable cams create different switch modes
- IP68

Stock No.	Positions
80155	4
80156	8



Stock No. 80155

REVERSING ROCKER SWITCHES |

Stock No. 44131

- Circuitry: DPDT
- (On)-Off-(On)
- Weatherproof
- 1/4" contacts

Stock No. 44130

- Sealed to IP66



MINIATURE SNAP-IN ROCKER SWITCHES |

- Aesthetically pleasing curved rocker
- Available with a black unmarked rocker, or a black rocker with a red visible indicator when switched on
- Mounting hole is .480" x 1.072"
- Single Pole, Single Throw (On-Off), two contacts
- Fits standard size cutouts
- 1/4" male tab contacts



Black Rocker and Bezel
Stock No. 44238



Black Rocker w/ Red Rocker End and Bezel
Stock No. 44239

WATERPROOF RECTANGLE ROCKER SWITCHES |

- Body material: black nylon 6/6
- Actuator material: polycarbonate (94-V2)
- IP65



Stock No. 44120

Stock No. 44121

Stock No. 44164

Stock No.	Circuit	Type	Current Rating	Contacts	Illumination
1/4" Male Terminal Contacts					
44120	On-Off	SPST	25A at 14VDC	3	Red LED
44121	On-Off-On	SPDT	25A at 14VDC 15A at 28VDC 16A at 125VAC 10A at 250VAC 16(6)A at 250VAC	3	None
3/16" Male Terminal Contacts					
44164	On-Off	SPST	20A at 12VDC	3	Blue
44165	On-Off	SPST	20A at 12VDC	3	Amber

RECTANGLE ROCKER SWITCHES |

Rectangle Rocker Switches

- Body material: black nylon 6/6
- Actuator material: black glass filled nylon
- Contact 1/4" male terminals
- IP56



Stock No. 44123



Stock No. 44124

Stock No.	Circuit	Type	Current Rating	Contacts	Illumination
44123	On-Off	SPST	*A	2	None
44124	On-Off	SPST	*B	3	Neon Red Lens

*A - 21A at 14VDC, 20A at 125VAC, 10A at 250VAC; 16A at 125VAC 3/4HP, 10A at 277VAC 3/4HP

*B - 16A at 125VAC 3/4HP

EURO-SR ROCKER SWITCHES

- Slow-make/slow-break contact mechanism
- Available with the complete range of rugged single and two pole illuminated or non-illuminated circuits
- Thermoplastic rocker actuators
- Rocker and bezel are a high-graded nylon supplied with matte finish
- Snap-in mounting with plastic bezel
- ¼" male tab contacts
- RoHS compliant



250VAC
10A

125VAC
15A

28VDC
15A

Stock No.	Circuit	Type	Lighting
43101	On-Off	SPST	Unlit
43102	(On)-Off	SPST	Unlit
43105	On-Off	SPST	One Red
43103	On-Off-On	SPDT	Unlit
43104	(On)-Off-(On)	SPDT	Unlit
43106	On-Off-On	SPDT	Two Red
43107	On-None-Off	SPDT	Two Red
43108	On-Off	DPST	Unlit
43109	(On)-Off	DPST	Unlit
43113	On-Off	DPST	One Green
43110	On-Off-On	DPDT	Unlit
43111	(On)-Off-(On)	DPDT	Unlit
43114	On-Off-On	DPDT	Two Green
43116	On-None-On	DPDT	Unlit
43112	On-On-On	DPTT	Unlit

(On) = momentary on

X SERIES SWITCHES

- Outdoor applications
- LED illumination
- IP56 sealing
- Easy snap-in mounting with plastic bezel
- Frames are nylon and actuators are nylon with glass fiber
- ¼" male tabs
- RoHS compliant



125VDC
16A

14VDC
21A

28VDC
10A

Stock No.	Circuit	Type	Lighting
43230	On-Off	SPST	"On/Off" Icon
43231	On-Off	SPST	Amber LED
43232	On-On	SPDT	2 Amber LED
43233	On-Off-On	SPDT	2 Amber LED
43234	(On)-Off-(On)	SPDT	2 Amber LED
43235	On-Off	DPST	"On/Off" Icon
43236	On-Off	DPST	Unlit
43237	On-On	DPST	Unlit

(On) = momentary on

SVR SEALED ROCKER SWITCHES

- Panel actuator style
- Waterproof and environmentally protected up to IP68
- Assembled switches
- RoHS compliant



12VDC
12A

Panel Mounts



End Stock No. 43247 Center Stock No. 43246

Stock No.	Circuit	Type	Lighting	Lens
43200	On-None-On	SPST	Unlit	----
43201	(On)-None-(On)	SPST	Unlit	----
43204	On-None-On	SPST	Amber LED	Green Top Lens
43202	On-Off-On	SPDT	Unlit	----
43203	(On)-Off-(On)	SPDT	Unlit	----
43205	On-Off-On	SPDT	Two Amber LEDs	Green Top Lens Red Bottom Lens
43206	On-None-Off	SPDT	Amber LED	Green Top Lens
43208	(On)-None-(On)	DPST	Unlit	----
43207	On-None-On	DPDT	Unlit	----
43209	On-Off-On	DPDT	Unlit	----
43210	(On)-Off-(On)	DPDT	Unlit	----
43212	On-None-On	DPDT	Amber LED	Green Top Lens
43213	On-Off-On	DPDT	Two Amber LEDs	Green Top Lens Red Bottom Lens
43214	On-On-On	DPDT	Amber LED	Green Top Lens
43211	On-On-On	DPTT	Unlit	----

(On) = momentary on

BLACK PANEL PLUGS



Stock No. 43240

Stock No.	Series
43241	Euro-SR
43242	SVR
43243	X

Custom pre-printed switches available for:

- Euro-SR
- SVR



Special order only. Call 800-328-2724 for pricing and minimums.



ROUND ROCKER SWITCHES |

- 3/16" male quick disconnect contacts
- Easy to install nylon frames
- Dust resistant
- 20.2mm mounting hole

12V
16A

LED Snap-in Round Rocker Switches



Stock No. 47688 Stock No. 47689 Stock No. 47690

Stock No.	Circuit	Type	Markings
47688	On-Off	SPST	No Indicator/No Marking
47689	On-Off	SPST	I / O
47690	On-Off	SPST	Off Position Red
47692	(On)-Off	SPST	No Indicator/No Marking
47691	On-Off-On	SPDT	No Indicator/No Marking

Round Rocker Switches Square Face Plate



Stock No. 47693 Stock No. 47695 Stock No. 47699

Stock No.	Circuit	Type	Markings
3/16" Male Disconnect			
47693	On-Off	SPST	Off Position Red
47694	On-Off	SPST	Amber LED Light
47695	On-Off	SPST	Red LED Light
47696	On-Off	SPST	Green LED Light
1/4" Male Quick Disconnect Contacts			
47697	On-Off	SPST	Red LED Light
47698	On-Off	SPST	Amber LED Light
47699	On-Off	SPST	Green LED Light

Round Rocker Switch Connector

Stock No. 47668

- 6" UL 1015 16ga wire leads
- Connects to any round rocker with 3/16" male terminals
- Frame is nylon UL 94V-2
- Heat stabilized thermoplastic connectors



WATERPROOF ROUND PUSH BUTTON SWITCHES |

- Body material: black nylon 66
- Actuator material: polycarbonate (94-V2)
- Contact 1/4" male terminals
- 23mm mounting hole
- IP65



Round Push Button
with Black Actuator



Round Push Button
with Red Actuator

Stock No.	Circuit	Type	Current Rating	Contacts	Illumination
*44102	(On)-Off	SPST	*G	2	None
*44103	On-Off	SPST	*G	2	None
44104	On-Off	SPST	*H	3	Red LED
44105	On-Off	SPST	*H	4	Red LED
44100	On-Off	DPST	*G	4	None
44101	On-Off	DPST	*H	4	Red LED

*G - 20A at 14VDC, 10A at 28VDC, 10A at 125VAC, 6A at 250VAC, 1/2hp at 125/250VAC

*H - 20A at 14VDC

*3/16" contacts

(on) = momentary on

WATERPROOF ROUND ROCKER SWITCHES |

- Body material: black nylon 66
- Actuator material: polycarbonate (94-V2)
- Contacts: 3/16" male terminals
- IP65



Stock No. 44115



Stock No. 44116



Stock No. 44122

Stock No.	Circuit	Type	Current Rating	Contacts	Illumination
44115	On-Off	SPST	20A at 12VDC	2	None
44116	On-Off	SPST	20A at 12VDC	3	Red LED
44122	On-Off	DPST	20A at 12VDC	4	Red LED

ROCKER SWITCHES |

Illuminated Round Rocker Switches

12V
20A

- Easy to install snap-in mounting nylon frames
- Illuminated actuators are molded in polycarbonate
- 3/16" male tab contacts
- Single Pole, Single Throw (On-Off), three contacts



Illuminated Indicator

Color	Stock No.
Amber	44170
Green	44171
Blue	44234
Red	44235



Fully Illuminated
Stock No. 44236



Fat Bat
Stock No. 44237



Clear Boot
Stock No. 44277

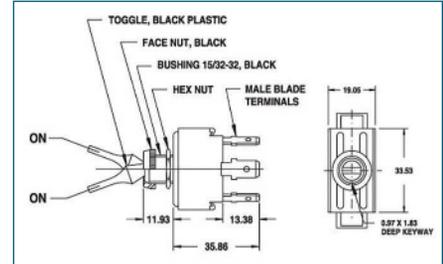
Clear boot goes on 44170, 44171, 44234, 44235 and 44236

STANDARD NYLON TOGGLE SWITCHES

NEW

Littelfuse heavy-duty toggle switches are designed in a variety of configurations/styles to be used in all vehicle and equipment applications. With rust and corrosion resistant screw or male blade terminal contacts, these switches can handle a wide range of environments. The housing of the switch can be nylon, plastic/metal combination or die cast depending on the style of the switch.

- Standard black nylon handle: 1¹/₁₆" long
- Includes mounting hardware: black metal face nut and nickel plated hex nut
- Weather-resistant o-ring sealed bushing
- Mounting stem: 1⁵/₃₂" -32 thread, 1⁵/₃₂" long
- Fits panels up to 1/8" thick



12V
25A



Stock No. 43988

1/4" Blade Contacts			
Stock No.	Circuit	Type	Contacts
43987	On-Off	SPST	2
43988	(On)-Off	SPST	2
43994**	On/Red-Off/White	SPST	4
43992	On-Off-On	DPDT	6

** Illuminated



Stock No. 43993

#6-32 Screw Contacts			
Stock No.	Circuit	Type	Contacts
43986	On-Off	SPST	2
43993**	On-Off	SPST	4
43995**	On-Off-On	SPST	5
43989	On-Off-On	SPDT	3
43990	(On)-Off-(On)	SPDT	3
43991	On-Off-On	DPDT	6

** Illuminated

SWITCHES

LIGHTED TOGGLE SWITCHES

- Tip of handle is illuminated red in the on position
- 1/4" disconnects
- 1⁵/₃₂" - 32 thread mounting system
- 1¹/₁₆" long handle

12V
25A



Stock No. 44208

Stock No.	Type	Circuit	Terminals
44208	SPST	On-Off	4
44209	SPDT	On-Off-On	5

EXTRA HEAVY-DUTY METAL TOGGLE SWITCHES

NEW

- Current: 30A @ 6-12V DC, 15A @ 24-36V DC
- Chrome plated brass handle: 1¹/₁₆" long
- Diecast housing
- Nickel-plated brass hardware
- Fits panel up to 3/16" thick



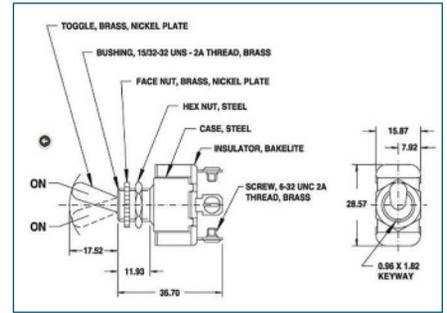
Stock No. 43984

#6-32 Screw Contacts			
Stock No.	Circuit	Type	Contacts
43985	On-Off-None	SPST	2
43984	On-Off-On	SPDT	3

STANDARD HEAVY-DUTY METAL TOGGLE SWITCHES

NEW

- Current: 25A @ 12V DC, 15A @ 24V DC, 10A @ 36V DC
- Standard handle: 1 1/16" long
- Phenolic housing with plated steel cap
- Nickel-plated brass hardware
- Mounting stem is nickel-plated brass, 15/32"-32 thread, 15/32" long
- Fits panels up to 9/32"



Stock No. 43960

1/4" Blade Contacts			
Stock No.	Circuit	Type	Contacts
43960	On-Off	SPST	2
43969*	On-Off	SPST	2
43973	On-(Off)	SPST	2
43964	On-On	SPDT	3
43975	On-Off-On	SPDT	3
43983	On-Off	DPST	4
43965	On-Off-On	DPDT	6
43976	On-None-On	DPDT	6

* With sealing O-Ring



Stock No. 43966

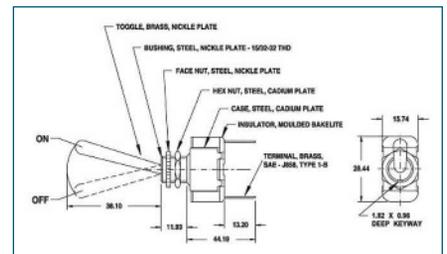
#6-32 Screw Contacts			
Stock No.	Circuit	Type	Contacts
43962*	On-Off	SPST	2
43968	On-Off-(On)	SPDT	3
43979	On-None-On	SPDT	3
43982	On-Off-On	SPDT	3
43981	On-Off	DPST	4
43966	(On)-Off-(On)	DPDT	6
43972	On-On	DPDT	6
43978	On-Off-On	DPDT	6

* With sealing O-Ring

LONG HANDLE HEAVY-DUTY METAL TOGGLE SWITCHES

NEW

- Current: 25A @ 12V DC, 15A @ 24V DC, 10A @ 36V DC
- Standard handle: 1 1/2" long
- Phenolic housing with plated steel cap
- Nickel-plated brass hardware
- Mounting stem is nickel-plated brass, 15/32"-32 thread, 15/32" long
- Fits panels up to 9/32"



Stock No. 43961

1/4" Blade Contacts			
Stock No.	Circuit	Type	Contacts
43961	On-Off	SPST	2
43974	On-(Off)	SPST	2

* With sealing O-Ring



Stock No. 43967

#6-32 Screw Contacts			
Stock No.	Circuit	Type	Contacts
43963	On-Off	SPST	2
43967	(On)-Off-(On)	DPDT	6

* With sealing O-Ring

SWITCHES

**12/24V
16A**

ST SERIES SEALED METAL TOGGLE SWITCHES

- Suitable for low voltage 12/24VDC
- Dielectric Strength: 1000V
- Mechanical Life: 150,000 cycles
- Comply with MIL-DTL-3950G requirements
- IEC 60529 IP68 sealing performance
- Complies with UL 61058-1



185°F (85°C)
-40°F (-40°C)

1/4" Contacts			
Stock No.	Circuit	Type	Contacts
44186	On-Off	SPST	2
44191	On-(On)	SPST	3
44193	On-Off-On	SPST	3
44189	On-On	SPDT	3
44195	On-Off-(On)	SPDT	3
44197	(On)-Off-(On)	SPDT	3
44187	On-Off	DPDT	4
44190	On-On	DPDT	6
44192	On-(On)	DPDT	6
44194	On-Off-On	DPDT	6
44196	On-Off-(On)	DPDT	6
44198	(On)-Off-(On)	DPDT	6

#6-32 Screw w/Cage Clamp			
Stock No.	Circuit	Type	Contacts
44586	On-Off	SPST	2
44589	On-On	SPDT	3
44591	On-(On)	SPDT	3
44593	On-Off-On	SPDT	3
44595	On-Off-(On)	SPDT	3
44597	(On)-Off-(On)	SPDT	3
44587	On-Off	DPDT	4
44590	On-On	DPDT	6
44592	On-(On)	DPDT	6
44594	On-Off-On	DPDT	6
44596	On-Off-(On)	DPDT	6
44598	(On)-Off-(On)	DPDT	6

TOGGLE SWITCHES

- Sealed and unsealed versions available
- Lighted units available for 12VDC only
- Red = On, Clear = Off
- 1/4" male blades or #6 screw contacts
- Mounting stem is 15/32" dia. and fits panels to 1/8" thick
- Includes face nut

12/24VDC

Nylon Toggle

Metal Toggle



Lighted

Nylon Toggle Switches					
Stock No.	Circuit	Type	Amp Rating	Contacts 1/4" male blades	Toggle
44200	On-Off	SPST	*A	2	Black Nylon
44201	(On)-Off	SPST	*B	2	Black Nylon
44206	On-Off	SPST	*B	3	Lighted
44202	On-Off-On	SPDT	*A	3	Black Nylon
44203	(On)-Off-(On)	SPDT	*B	3	Black Nylon
44207	On-Off-On	SPDT	*B	5	Lighted
44204	On-Off	DPST	*A	4	Black Nylon
44205	On-Off-On	DPDT	*A	6	Black Nylon

*A - 20A at 250VAC (On) = momentary on
*B - 10A at 250VAC, 15A at 125VAC

Metal Toggle Switches						
Circuit	Type	Amp Rating	Contacts 1/4" male blades		Screws Stock No.	Toggle
On-Off	SPST	*B	2	44250	----	Unsealed Metal
On-Off	SPST	*B	2	44251	2 44252	Sealed Metal
(On)-Off	SPST	*B	2	44240	2 44253	Sealed Metal
On-On	SPDT	*B	3	44255	3 44254	Sealed Metal
On-Off-On	SPDT	*B	3	44257	3 44256	Sealed Metal
(On)-Off-(On)	SPDT	*B	3	44287	3 44258	Sealed Metal
On-(Off)-On	SPDT	*B	3	44241	----	Sealed Metal
On-Off	DPST	*B	4	44259	----	Unsealed Metal
On-Off	DPST	*B	4	44261	4 44260	Sealed Metal
On-Off-On	DPDT	*B	6	44264	----	Unsealed Metal
(On)-Off-(On)	DPDT	*B	6	44270	6 44271	Unsealed Metal
On-On	DPDT	*B	6	44263	6 44262	Sealed Metal
On-Off-On	DPDT	*B	6	44266	6 44265	Sealed Metal
(On)-Off-(On)	DPDT	*B	6	44272	6 44273	Sealed Metal
(On)-Off-(On)	DPDT	*C	6	44198	----	Sealed Metal

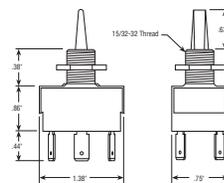
*B - 10A at 250VAC, 15A at 125VAC
*C - 15A at 12/24VDC (On) = momentary on

Toggle Safety Cover

- Prevent accidental actuation
- Spring loaded design with a steel faceplate and plastic cover
- For use with the on-off metal toggles shown here

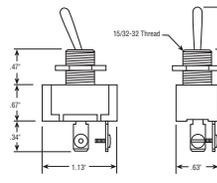
Stock No.	Color
44218	Red
44230	Yellow
44231	Green
44232	Blue

Typical Lighted Toggle



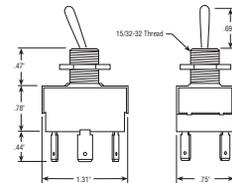
Shown with 1/4" male blades

Typical Metal SPST



Shown with screw terminals

Typical Metal DPDT



Shown with 1/4" male blades

Dimensions shown are nominal.

Call 800-328-2724 about specific switch requirements.

HEAVY-ACTION TOGGLE SWITCHES

Stock No. 44290

- Compact design
- SPST On-Off
- Two #6 screw contacts
- Use with recessed switch plate

Stock No. 44274



250V 3A 125V 6A

REVERSING TOGGLE SWITCHES

Stock No. 44268

- DPDT forward-reverse toggle switch
- (On)-Off-(On)
- Four silver 1/4" quick disconnects



12V 25A 24V 15A 36V 10A

Stock No. 44269

- For reversing control of motors
- DPDT, four #6 screw contacts
- (On)-Off-(On)



125V 15A 250V 12A

TOGGLE ACCESSORIES

- Provides protection from weather and salt spray
- Full boot style fits over switches with 15/32" dia. mounting stems and standard length handles
- Half boot style allows any handle length to protrude through (round handles only)

Nuts - All 15/32" Threads

Panel Bushing Seal
Stock No. 44275



Face Plate
Stock No. 44216

- On-Off



Standard Hex
Face Nut

Black Stock No. 44211

Nickel Stock No. 44210



Black Half
Toggle Boot

Stock No. 44215



Gray Half
Toggle Boot

Stock No. 44282



Dress Face Nut With
Knurled Edge

Black Stock No. 44213

Nickel Stock No. 44212



Full Toggle Boot
Stock No. 44219

- For lighted switches



Full Toggle Boot
Stock No. 44214



HEAVY-DUTY TOGGLE SWITCHES

- Designed for use where an extra high amp rating is needed
- Heavy die-cast body
- #8 screw contacts
- Four circuit types



12V 50A

Stock No. 44224

Stock No.	Circuit	Type	Contacts	Handle Type
44224	On-Off	SPST	2 #8 screw	1" Std. Chrome
44246	(On)-Off-(On)	SPDT	3 #8 screw	1" Std. Black
44225	On-Off-On	SPDT	3 #8 screw	1" Std. Chrome
44226	(On)-Off-(On)	SPDT	3 #8 screw	1" Std. Chrome

(On) = momentary on

SEALED TOGGLE SWITCHES

- Material: nickel plated toggle, bushing, ring nut and hex nut
- Black weather resistant plastisol coating
- Neoprene seal between toggle and bushing
- UL 1015 wire leads



Stock No. 44280

12V 20A

Stock No.	Circuit	Type	Coated Wire Leads
44280	On-Off	SPST	2-14 ga
44281	(On)-Off-(On)	SPDT	3-14 ga

(On) = momentary on

HEAVY-ACTION TOGGLE SWITCH

- Coated 18 ga wire leads

150°F (65.6°C)
0°F (-17.8°C)

12V



Stock No. 44291

Stock No. 44279

Stock No.	Circuit	Type	Coated Wire Leads
44291	On-Off	SPST	(2) 18 ga
44279*	On-Off-On	SPDT	(3) 16 ga

*With .156 bullet connectors (On) = momentary on

Full Toggle Boot

Stock No. 44276

- For heavy-duty switches with 1" handles



Recessed Switch Plate

Stock No. 44274

- Attachment for toggle switch
- Stock No. 44290, sold separately
- Prevents accidental actuation or damage to the switch
- Mounts flush in a 2" dia. hole



MOMENTARY PUSH BUTTON SWITCHES

Heavy-Duty Stock No. 44067



- SPST/Normally Off
- 5/8"-32 thread, 2 1/32" (16.7 mm) long
- 2 screws
- Contacts: silver
- Circuitry: Off-On, Normally Off, On with button depressed, spring return to Off

12V
35A
24V
20A



Heavy-Duty Stock No. 44068



- SPST/Normally Off
- 5/8"-32 thread, 2 1/32" (16.7 mm) long
- 2 screws
- O-ring seal in the mounting stem, and screw-on black rubber cap
- Contacts: silver
- Circuitry: Off-On, Normally Off On with button depressed, spring return to Off

12V
35A
24V
20A



Heavy-Duty Stock No. 44069



- SPST/Normally Off
- 5/8"-32 thread, 2 1/32" (16.7 mm) long
- 2 screws
- O-ring seal in the mounting stem
- Contacts: silver
- Circuitry: Off-On, On with button depressed, spring return to Off
- Snap-on black rubber cap

12V
35A
24V
20A



Heavy-Duty Stock No. 44070



- SPST/Normally Off
- 5/8"-32 thread, 2 1/32" (16.7 mm) long
- 2 screws
- Plastic button and screw-on cap
- Contacts: silver
- Circuitry: Off-On, On with button depressed, spring return to Off
- Plastic button and screw on black rubber cap

12V
35A
24V
20A



Marine Extra Heavy-Duty Stock No. 44156



- SPST, normally open
- On with button depressed, spring return to Off
- Corrosion-resistant brass case
- Moisture repellent insulators
- Two brass screw terminals
- Mounting stem; brass 5/8"-32 thread, 1 3/8" (34.9 mm) long, fits panel up to 1" (25 mm) thick

12V
35A
24V
20A
36V
10A



Heavy-Duty with Protected Button Stock No. 44155



- Recessed face nut design prevents accidental actuation
- Two 8/32 screw terminals
- Mounting stem; 5/8"-32 thread, 2 1/32" (16.7 mm) long

12V
35A
24V
20A



PVC Coated Momentary Start Switch Stock No. 44046



- Stem 1 1/16" long
- 8" 14 ga wire loop
- PVC coating protects from dust and weather
- Normally open

6V
25A
12V
15A



Momentary Start Switch Stock No. 44047



- Stem 3/4" long, 5/8" dia.
- Two #8 screw contacts
- Optional weather and dustproof boot available
- Normally open

6V
25A
12V
15A



Momentary Start Switch Stock No. 44049



- Stem 5/8" long, 5/8" dia.
- 70A make /14VDC 20A Break
- Flush silver contact screws in molded insulator
- Normally open

24V
40A



MOMENTARY PUSH BUTTON SWITCHES

Switch Boots

Pollak®
A Stoneridge Company

- Weather and dustproof neoprene rubber
 - Can be used for both momentary start switches
- Stock No. 44047 and 44049**



Black
Stock No. 44053



Red
Stock No. 44054

Momentary Master Push Button Switch

Stock No. 44006

- For controlling apparatus that requires temporary power and manned operation
- Heavy-duty momentary push switch with water resistant cover
- Normally open

12V
16A



Compact Momentary Push Button Switch

Stock No. 44005

Pollak®
A Stoneridge Company

- Two #6 screw contacts
- Normally open

6V
15A

12V
10A



Horn button

Stock No. 44003

Pollak®
A Stoneridge Company

- Black plastic button, nickel plated housing
- Mounting holes 2 1/8" on center
- Two #6 screw contacts
- Normally open

12V
5A



PUSH-PULL SWITCHES

Stock No. 44045



- Three position, On-On-Off
- Chrome plated brass knob
- Stem 3/8" dia., 1 1/4" long
- Four #8 screw contacts

12V
15A



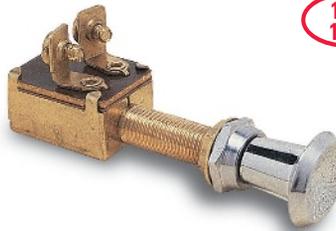
Stock No. 44041

- Two position, Off-On
- Chrome knob
- Stem 3/8" dia., 1 1/4" long
- Two #8 screw contacts



6V
25A

12V
15A



EXTRA HEAVY-DUTY PUSH-PULL SWITCH

Stock No. 44015



- On-Off, two screw contacts
- Chrome plated knob
- Mounting stem 15/32" dia., 5/8" long

6-28V AC
75A



DOOR SWITCHES

Door Switch

Stock No. 44007

Pollak®
A Stoneridge Company

- Plunger style door switch with self tapping threads
- Includes mating connector
- 18 ga GPT wire, three 8" leads
- Normally closed

14V
10A



With Faceplate

Stock No. 44159

Cole Hersee®
A Littelfuse® Brand

- Normally closed
- SPST
- Contacts: two screws
- Two 9/64" dia. mounting holes, 1 3/8" on center
- 45/64" dia. plated steel case

12V
5A



Momentary Door Switch

Stock No. 44162

Cole Hersee®
A Littelfuse® Brand

- Normally closed
- DPST
- Four 1/4" blade terminals
- 7/16"-20 thread mounting stem, 7/16" long
- Two flats on stem for mounting in double-D hole

12V
10A



IGNITION SWITCHES



Stock No.	Positions	Switch Style	Keyed
44065	2	On-Off Lock Switch	Various
44066	2	Off-(On) Lock Switch	PK-556
44059	3	Acc-Off-On Key Switch	PK-556
44064	4	Lock Switch with Lockout Feature	PK-556
44061	4	Acc-Off-On/Acc-Start	Various
44062	4	Acc-Off-On/Acc-Start	PK-556



Four position - Stock No. 44179

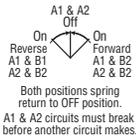
- Zinc diecast coded tumblerlock
- Mounting stem: 3/4"-20
- 12V DC: 10A Accessory, 10A Ign, 5A Start

HEAVY-DUTY ROTARY REVERSING SWITCH

Stock No. 44035

- DPDT spring return to Off from both On positions
- Allows forward/reverse motion of a motor without the need for a relay
- Heavy-duty component parts: 3/32" thick terminals, silver-laminated contacts
- 10-32 (9.5 mm) terminal screws with lockwasher
- Ideal for head lamp rotary and fuel tank

50A



ENGINE START/ENGINE STOP MOMENTARY SWITCHES

- Die-cast housing, with knurled aluminum face nut
- Two screw terminals with lock washers
- Mounting stem 7/8"-24 thread
- Keyed to prevent switch from turning

12V 35A

24V 20A



Stock No. 44157

- With black 'Start' button



Stock No. 44158

- With red 'Stop' button

E-STOP, PUSH BUTTON & SELECTOR SWITCHES

- Available in 1-hole, 2-hole and 3-hole enclosures
- Weather resistant, IP65 rated

Control Station Enclosures



Stock No. 44148



Stock No. 44149



Stock No. 44150



Stock No. 44151

- Switch operators made of aluminum and zinc alloy
- Contact elements snap onto the mounting adapters of the switch operators and are keyed to ensure proper alignment
- Modular construction with rear locking screws

Switches Stock No. 44012 & 44013
Use adaptor Stock No. 44023 and contacts Stock No. 44018 or 44019



Selector Switch Actuator, Lever Stock No. 44012



Green Pushbutton Actuator, Spring Return Stock No. 44013



Contact Element Stock No. 44018
• Normally closed



Contact Elements Stock No. 44019
• Normally open



Mounting Adaptor Stock No. 44023



- Contact elements are stackable depending on control station depth, recommended max stack is 2 control elements deep
- Actuator sealing gasket has a gripping action to hold actuator securely in place once assembled

24V 3A
120VAC 6A



140°F (60°C)
-13°F (-25°C)



Pushbutton Actuator Stock No. 44017



Pushbutton Actuator w/Light Option Stock No. 44011



Contact Element Stock No. 44040
• Normally closed



Contact Elements Stock No. 44050
• Normally open



Mounting Adaptor Stock No. 44039



Typical finished assembly



Red LED Lamp Holder Stock No. 44014
• For Stock No. 44011



Emergency Stop Disc Label Stock No. 44038

4-hole and 5-hole enclosures available on special order. Call 800-328-2724 for details.

LOW PRESSURE SWITCHES

Fingertip Adjustable Pressure Switches

- Long life elastomer diaphragm
- High quality snap action
- Visual calibration
- Economical and compact for cost, space and weight savings
- ¼" blade terminals
- SPDT



NASON
NEW THINKING

30VDC
5A

Stock No.	Nason No.	Set Point Range (PSI)
76200	SQ1	2-10
76202	SQ2	6-30
76204	SQ3	20-120

Fixed Pressure Setting – Factory Preset

- Circuit transfer at rising set point
- Pneumatic and hydraulic applications
- 18" 18ga UL 3173 wire leads
- NEMA 4, 13
- SPDT



NASON
NEW THINKING

10A

Stock No.	Nason No.	Fixed Set Point (PSI)
76206	LM-2C-10R/WLAT	10
76208	LM-2C-20R/WLAT	20
76210	LM-2C-30R/WLAT	30
76212	LM-2C-40R/WLAT	40
76214	LM-2C-50R/WLAT	50
76216	LM-2C-60R/WLAT	60
76218	LM-2C-70R/WLAT	70
76220	LM-2C-80R/WLAT	80
76224	LM-2C-90R/WLAT	90
76226	LM-2C-100R/WLAT	100
76228	LM-2C-110R/WLAT	110
76230	LM-2C-120R/WLAT	120
76232	LM-2C-130R/WLAT	130
76234	LM-2C-140R/WLAT	140
76236	LM-2C-150R/WLAT	150
76238	LM-2C-160R/WLAT	160
76240	LM-2C-170R/WLAT	170
76242	LM-2C-180R/WLAT	180
76244	LM-2C-190R/WLAT	190
76246	LM-2C-200R/WLAT	200
76248	LM-2C-210R/WLAT	210
76250	LM-2C-220R/WLAT	220
76252	LM-2C-230R/WLAT	230
76254	LM-2C-240R/WLAT	240
76256	LM-2C-250R/WLAT	250
76258	LM-2C-260R/WLAT	260
76260	LM-2C-270R/WLAT	270
76262	LM-2C-280R/WLAT	280
76264	LM-2C-290R/WLAT	290
76266	LM-2C-300R/WLAT	300

TEMPERATURE SWITCHES

- Circuit closes at rising set point
- Bi-metal immersion design
- Factory preset temperature
- Direct action contacts
- Available in a wide range of configurations
- Economical and compact for cost, space and weight savings
- SPST, normally open
- 6" 18ga UL 3173 wire leads



NASON
NEW THINKING

3A

Stock No.	Nason No.	Temperature
76301	TT-F3A-50RWL	50°F
76302	TT-F3A-60RWL	60°F
76303	TT-F3A-70RWL	70°F
76305	TT-F3A-90RWL	90°F
76306	TT-F3A-100RWL	100°F
76307	TT-F3A-110RWL	110°F
76308	TT-F3A-120RWL	120°F
76309	TT-F3A-130RWL	130°F
76310	TT-F3A-140RWL	140°F
76311	TT-F3A-150RWL	150°F
76312	TT-F3A-160RWL	160°F
76313	TT-F3A-170RWL	170°F
76314	TT-F3A-180RWL	180°F
76315	TT-F3A-190RWL	190°F
76316	TT-F3A-200RWL	200°F
76317	TT-F3A-210RWL	210°F
76318	TT-F3A-220RWL	220°F
76319	TT-F3A-230RWL	230°F
76320	TT-F3A-240RWL	240°F
76321	TT-F3A-250RWL	250°F
76322	TT-F3A-260RWL	260°F
76323	TT-F3A-270RWL	270°F
76324	TT-F3A-280RWL	280°F
76325	TT-F3A-290RWL	290°F

More Nason products available by special order. Call 800-328-2724 for details.

UNIVERSAL COOLANT LEVEL SENSOR

CASCO
AN AMPHENOL COMPANY

- Compatible with ethylene glycol and extended life coolants
- Discrete outputs reduce interface development time
- Standard ¼-18 NPT mounting thread size
- Can be mounted in any orientation in plastic or metal reservoirs
- 20 Max PSI

Application

- Heavy truck, passenger vehicle, industrial, construction and marine

257°F (125°C)
-40°F (-40°C)



Stock No. 76330

BATTERY ISOLATORS VS. SEPARATORS

What's the Difference?

Wired2Serve™ Blog Article

ISOLATOR



SEPARATOR

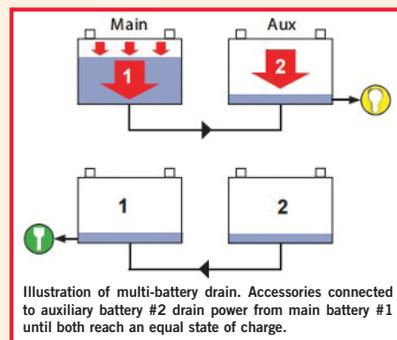


VS.

Controlling parasitic loads, aka battery drain, and properly distributing electrical power is crucial to keeping vehicles working. However, this requires balancing the needs of the battery against those of the electrical system.

The addition of electrical loads such as lights, entertainment systems, communications equipment and other accessories, continue to draw power when the engine is off. For these applications, having a multiple battery system is essential, but simply being wired into the vehicle's electrical system can allow auxiliary batteries to drain power from the main battery, inhibiting engine starting and other essential functions.

This is where battery isolators and separators come into play. But despite seeming very similar, their jobs are very different.



ISOLATORS

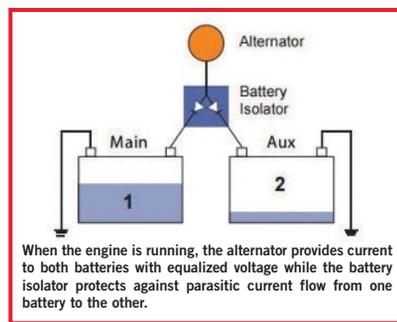
Battery isolators are best seen as the distribution point of an automotive electric system. Generally built with diodes, isolators ensure that charge is evenly distributed between multiple batteries and the alternator.

Numerous 12-volt electrical systems often rely on at least one battery to start the engine and another to power accessories. But this can become a problem when a fully charged battery is connected to a partially discharged or dead battery. The current in the fully charged battery will drain to the less charged battery, until both reach a common charge level, or even worse, discharge completely.

Regardless of how many batteries are available, this current flow from one battery to another will continue until all batteries in the electrical system reach the same charge level and may prevent the engine from starting.

A battery isolator can eliminate the problem of battery drain altogether. By using diodes to only allow current to flow in one direction, a battery isolator prevents a fully charged main battery from passing current to a partially charged auxiliary battery.

With this setup, each battery is isolated and acts as an independent power source, allowing the main battery to conserve power for starting and essential functions.



When charging, each battery determines the amount of charge it needs based on its own requirements. This control method is the best way of isolation. That said, however, the diodes used will lead to a voltage drop that's usually small, but noticeable, and should be factored into any circuit designs.

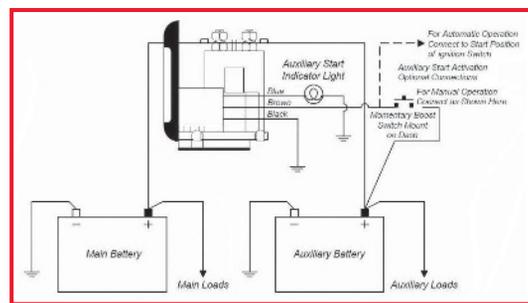
SEPARATORS

Battery Separators, on the other hand, are best seen as switches that can direct current, enabling a primary and auxiliary bank of batteries to be charged from a single source, using a solenoid.

When the engine starter is engaged, the battery separator compares the voltage in both main and auxiliary batteries. If the separator determines that there's not enough voltage in the primary source to perform an essential function, such as starting an engine, it will open the solenoid and allow current to flow from the auxiliary battery to make up the difference.

However, if the drain on the charging system by the auxiliary or main battery bank reduces the system voltage below a certain point, it will disconnect the battery banks from each other, protecting them from excessive drain.

Also unlike the battery isolator, a separator will also allow current to flow in the opposite direction as well, so an auxiliary battery can recharge from the primary alternator or other source of power. Although this connection will stop when voltage reaches a certain point, the design does make it possible for a damaged auxiliary battery to drain the system, offering less protection against parasitic loads.



WHICH TO USE?

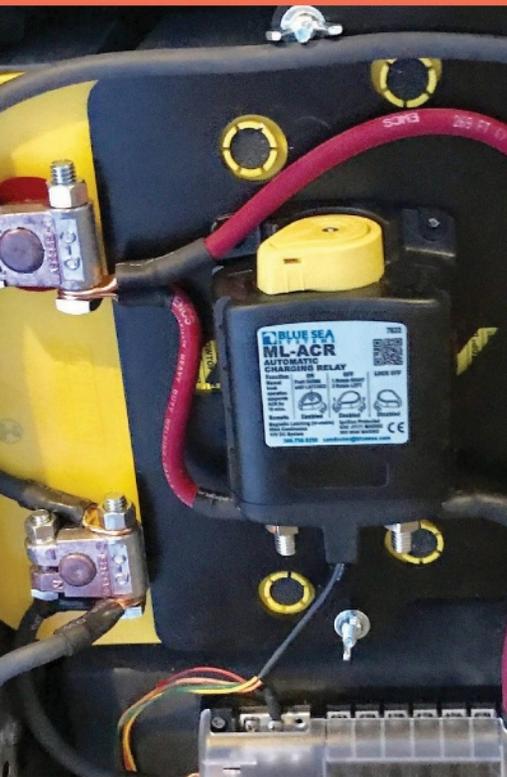
The primary difference between battery isolators and battery separators lies in the flow of current. An isolator works with a diode system that allows one-directional flow, whereas the separator has a solenoid function that can choose to pull power from either source.

As you can see, separators and isolators have very different jobs, and how you use them will depend on the job and your power needs. Separators are ideal for systems with an auxiliary battery, especially ones where you're not concerned about parasitic loads, or want a reliable backup system. Crucial systems with strong batteries, in particular, can make effective use of separators, especially if they need to be charged quickly.

For systems with multiple batteries where redundancy is required, an isolator is likely the better solution. Isolators will ensure that no one battery drains the others in the system, offering key redundancy in a system that needs either multiple backups or needs to put several batteries on one alternator. That said, the fact that isolators charge all batteries evenly may not be ideal for some applications, and should be considered accordingly. Battery management and protection are key to a well-running vehicle.

BATTERY MANAGEMENT

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InPOWER
the systems people

BLUE SEA
SYSTEMS

EATON

CH Cole Hersee®
A Littelfuse® Brand

Pollak®

GIGAVAC®
ADVANCED SWITCHING SOLUTIONS

BATTERY DISCONNECT SWITCHES NEW



- Designed to minimize battery drain, ensure maintenance personnel safety, and when used in conjunction with a padlock, provide vehicle theft protection
- Lock compatibility allows operators to lock out the power enabling them to safely conduct maintenance
- Mounting: M8
- Circuits: On-Off
- Sealed IP67

12-24VDC

Stock No.	Amp
44051	300
44081	250

185°F (85°C)
 -40°F (-40°C)



Stock No. 44051

BATTERY DISCONNECTS WITH LOCKOUT



- Fiber composite housing and hermetic seal prevent corrosion inside and out
- Lock-out/tag-out meets OSHA requirements
- Can be mounted in virtually any environment and can be placed near vehicle batteries
- Sealed IP69

185°F (85°C)
 -67°F (-55°C)

Stock No.	Amp	Volts	Action
77084	200	32	SPST
77080	300	32	SPST
77081	400	32	SPST
77082	500	32	DPST



Stock No. 77084

Panel Gasket
Stock No. 77085



Stock No. 44076

- Protects vehicles against tampering, theft and battery drain
- Protects from hazards during vehicle servicing, and can be locked-out or tagged-out
- Provides an effective emergency power cutoff
- Waterproof and dust proof to IP67

12VDC
300A



BATTERY ISOLATOR SWITCH WITH DETACHABLE KEY

Stock No. 44075

- Stop-key single circuit
- Maximum load is 500 amps for 5 seconds at 12 volts DC, 100 amps continuous
- Spare key and splash proof cover available

185°F (85°C)
 -13°F (-25°C)

12V

Spare Key
Stock No. 44077



Switch
Stock No. 44075

Waterproof Cover
Stock No. 44078

EXTRA HEAVY-DUTY BATTERY ISOLATOR SWITCH WITH REMOVABLE HANDLE

Stock No. 44080

- SPST (On-Off) for battery circuit only
- Maximum load is 2500 amps for 10 seconds at 12VDC, 250 amps continuous
- 3/8" studs, slotted 1/4" mounting holes on 4" centers
- Includes cover and chain

185°F (85°C)
 -13°F (-25°C)

12V



EMERGENCY STOP BATTERY ISOLATOR SWITCH

Stock No. 44037

- Heavy-duty strike off switch
- Twist to connect, push to disconnect

185°F (85°C)
 -13°F (-25°C)

24V
250A



MANUAL BATTERY DISCONNECT SWITCHES

Combining high performance design with industry leading mechanics and materials, these switches were created for a wide range of applications including off-road, emergency vehicles, material handling, agriculture, marine and construction. With protection from various environmental factors, you are guaranteed to find a disconnect switch for any application.

Single Pole Disconnect Switches

Single pole disconnect switches are available in a wide range of styles from standard light-duty switches to heavier duty knob and lever switches.

- Circuitry: SPST
- 100A - 350A at 24V
- Highly visible bright red handle
- Weatherproof



Stock No. 44500

- Removable or fixed handle options available
- Lock-out tag-out switches available
- Interchangeable with Bosch master disconnect switches



Stock No. 44514



Stock No. 44504



Stock No. 44509



Stock No. 44518

Stock No.	Amps	Ingress	Notes
44512	250	IP65, IP69K	Removable handle
44513	250	IP65, IP69K	Removable handle w/chain cap to cover when key is removed Red & yellow boots
44514	250	IP65, IP69K	Fixed handle w/ integrated lock-out tag-out black, red & yellow boots

Stock No.	Amps	Ingress	Notes
44500	300	IP65	360° handle rotation
44501	250	IP65	Corrosion protected aluminum body
44504	150	IP65	Push to Off with status window w/ emergency shutdown feature
44509	250	IP65	Push to Off with emergency shutdown feature
44510	100	IP4X	Ideal for light-duty applications
44511	150	IP4X	Brass terminals, light duty applications
44518*	150	IP4X, IP43	Bigger contacts for heavier current loads

* Features M10 zinc-plated steel contacts which allow heavier current load while keeping compact dimensions

- Removable or fixed handle options available
- Waterproof and dustproof
- Max operating voltage 24V



Stock No. 44516

Stock No.	Amps	Ingress	Notes
44515	350	IP65	Removable handle
44516	350	IP65	Removable handle w/ chain cap to cover when key is removed
44517	350	IP65, IP69K	Fixed handle w/ black boot

Dual Pole Disconnect Switches

Modern design, made of high-performance materials in terms of resistance to high temperatures, chemical and atmospheric agents. This battery master switch represents an evolution of our expertise and is also supplied in up to 500A DC version.

- Circuitry: DPST
- 250A or 500A available, 24V
- Isolates ground and battery simultaneously
- Good for high total amperage vehicles
- 12V and 24V dual voltage vehicles

185°F (85°C)
-40°F (-40°C)

Stock No.	Amps	Ingress	Notes
44507	250	IP67/IP69k	M10 terminals, protective rubber cap
44508	500	IP67/IP69k	M12 terminals, smart key makes handle removable or fixed



Stock No. 44507



Stock No. 44508

- Smartkey allows operator to make the handle removable or fixed
- IP69K rating for high pressure wash

MASTER DISCONNECT SWITCHES |



Sealed battery disconnect switches available in two styles: key operated and lever operated. For 6-36 volt and 180 amps continuous or 1,000 amps in-rush. One piece die-cast housing is 2 5/8" dia. and 4 3/8" long. Mounting stem is 3/4" dia. and 1/2" long. Instructions included.



6-36V



Lever Operated

Stock No. 44030

- SPST off-on for battery circuit only
- Does not disconnect alternator or generator
- 3/8" stud terminals
- Conforms to UL558

Lever Operated

Stock No. 44031

- DPST on-off for battery and alternator or generator circuit
- Breaks alternator circuit (max of 20 amps) prior to disconnecting battery
- 3/8" and #10-32 stud terminals



Key Operated

Stock No. 44029

- SPST off-on for battery circuit only
- Does not disconnect alternator or generator
- Includes indexing post to prevent rotation
- 3/8" stud terminals
- Conforms to UL558



Face Plate

- For master disconnect switches with off-on designation
 - Polished aluminum with black letters
- Stock No. 44032**
- For Lever Operated Switches
- Stock No. 44030 & 44031**
- Stock No. 44034**
- For Key Operated Switch
- Stock No. 44029**
- Includes alignment hole

MASTER BATTERY DISCONNECT SWITCHES |

NEW



Metal Bodied

Master battery disconnect switches are installed in electrical systems allowing the operator or technician to completely disconnect the electrical current running through your commercial vehicle or piece of equipment. Being able to isolate the flow of electricity has many safety, security and cost-saving benefits.

- SPST switches disconnect the battery circuit only, while DPST options will disconnect the battery and the alternator or generator field circuit as well
- Plated steel case with a diecast lever and copper contacts
- 3/4" through hole installation



6-36V

Stock No.	Circuit	Type	Volts	Continuous Rating	Intermittent Rating
44245	Off-On	SPST	6-36V	300A	2000A, 30 sec on, 5 min off
44244	Off-On	DPST	6-36V	300A	2000A, 30 sec on, 5 min off
44243*	Off-On	SPST	6-36V	175A at 6V-36VDC	800A at 6V-36VDC, 15 sec on, 5 min off
44242*	Off-On	SPST	6-36V	40A at 6V, 20A at 12V	250A at 6V, 125A at 12V

* UL Listed 375m

BATTERY SELECTOR/ MASTER DISCONNECT SWITCH



Stock No. 44043

- Allows use of the first, second or both batteries simultaneously
- Provides back-up starting power in an emergency
- Gives a reliable shutdown of power during maintenance
- Helps protect against electrical fires when the vehicle is not in use and minimizes battery drain
- 500A intermittent, 310A continuous



6-36V

MASTER BATTERY DISCONNECTS |



- Heavy-duty case designs for surface, panel or floor trim mount
- Stainless steel hardware and tin-plated copper studs
- Ignition protection to SAE J1171 and ISO 8846 for installation in a battery box or on vehicles carrying hazardous loads
- Internal components protected from harsh weather environments: IP67 and IP69K ingress protection

Front



Stock No. 44056

Back



Stock No. 44057

Stock No.	Description	Amp	Voltage
44056	Panel Switch	300	32V max
44058	Panel Lock Out Switch	300	32V max
44057	Lock Panel Switch	500	2 pole 12V & 24V



Stock No. 44058

m-SERIES BATTERY SWITCHES

- Ignition protected – safe for installation in gas engine compartments
- Case design allows surface or rear panel mounting
- Isolating cover with snap-on sections protects rear contacts

300A



Stock No. 78406

Stock No.	Blue Sea Part No.	Volts	Description
78405	6006	48	On-Off
78406	6007	32	4 Position Selector
78408	6010	32	Dual Circuit Plus, DPST
78407	6011	32	Mini Dual Circuits

e-SERIES BATTERY SWITCHES

- Make-before-break contact design allows switching between battery banks without power interruption
- Ignition protected – safe for installation in gas engine compartments
- Case design allows surface or rear panel mounting

350A



Stock No. 78400

Stock No.	Blue Sea Part No.	Volts	Description
78400	5511E	48	Dual Circuit Plus, DPST
78401	9001E	32	4 Position Selector
78402	9003E	48	2 Position Selector

HD-SERIES HEAVY-DUTY BATTERY SWITCHES

- Ignition protected – safe for installation in gas engine compartments
- Case design allows surface or rear panel mounting
- Accepts two 4/0 (95 mm²) battery cables

32VDC



Stock No. 78403

Stock No.	Blue Sea Part No.	Amps	Volts	Description
78403	3000	600	32	On-Off
78404	3002	500	32	4 Position Selector

m-SERIES AUTOMATIC CHARGING RELAY

Stock No. 78000

(Blue Sea No. 7601)

- Mini Automatic Charging Relay (M-ACR) designed to manage the charging current from alternators up to 65 amps
- Senses charging on two battery banks
- Waterproof - rated IP67

12-24VDC



SI-ACR AUTOMATIC CHARGING RELAY

Stock No. 78002

(Blue Sea No. 7610)

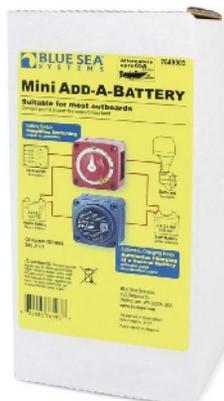
- Start Isolation (SI) protects sensitive electronics by temporary isolation of house loads from engine circuit during engine cranking
- Automatically combines batteries during charging, isolates batteries when discharging and when starting engines
- Waterproof - rated IP67



ADD-A-BATTERY KITS

- Adding a second battery to the electrical system prevents the unintended discharge of the engine start battery
- Simple way to control the charging and battery switching of two battery banks

Stock No.	Blue Sea Part No.	Amps	For Stock No.
78005	7649003	65	78000 & 78407
78006	7650003	120	78002 & 78400



Stock No. 78006

BATTERY LINK AUTOMATIC CHARGING RELAY

Stock No. 78003

(Blue Sea No. 7611)

- Automatically shares single source of charge with auxillary battery
- Side and bottom knockouts for cable connections
- Waterproof - rated IP67

12-24VDC

120A



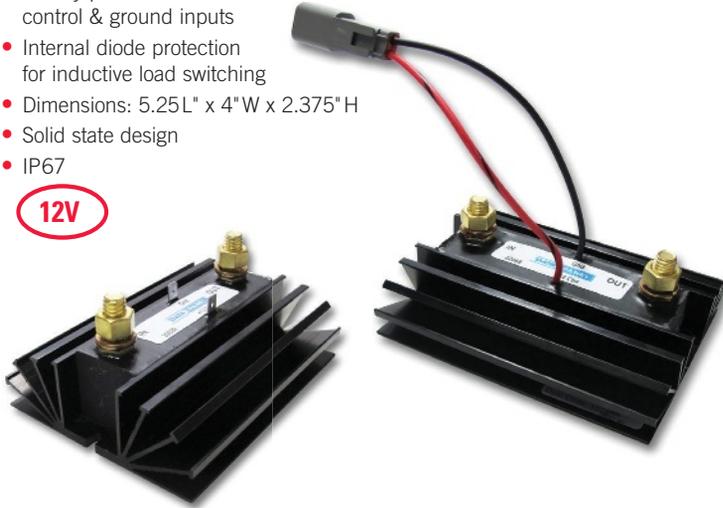
BATTERY MANAGEMENT

SOLID STATE BATTERY DISCONNECT SWITCHES |

Battery Disconnect Switch is a solid state, high current, battery shut-off switch designed for continuous duty switching. It handles loads up to 300A and includes internal protection for inductive load switching. These units are IP67 rated and provides the long-life reliability associated with non-mechanical solid state components.

- Remotely operate high current circuits
- Battery power shut off
- Replaces under seat battery disconnect switch
- Control circuit reverse battery protection +12V control & ground inputs
- Internal diode protection for inductive load switching
- Dimensions: 5.25L" x 4"W x 2.375"H
- Solid state design
- IP67

12V



Stock No.	Max Current	Max Inrush	Mating Connector Required
44405	200A	500A @ 1.0 sec	(2) 1/4" female push-on connectors (ex: 30511 pg 29)
44406*	200A	500A @ 1.0 sec	38170 Amphenol 2-pin plug
			38183 Amphenol 2-pin Wedge Receptacle
			38197 Pin Terminal 14-16 Ga
44407	300A	500A @ 1.0 sec	(2) 1/4" female push-on connectors
44408*	300A	500A @ 1.0 sec	2-pin Amphenol AT Series Plug (same as 44406)

*Pigtail included

See Amphenol AT Connectors on pages 52-53.

ELECTRONIC AUXILIARY BATTERY SWITCH (ABS) |

InPOWER
the systems people

- Ideal for charging auxiliary battery and isolating it from vehicle's chassis battery and alternator
- Solid state technology
- Prevents over-current, over temperature and under-voltage

+9.0 to 18V



Stock No. 44413

Stock No.	Amp
44410	100
44411	150
44412	175
44413	200

SOLID STATE DISCONNECT SWITCH |

InPOWER
the systems people

Stock No. 44404

- 275A over current shutdown
- User-adjustable power shut-off timer
- 800A surge capability
- Over temperature shutdown

12V



BATTERY DISCONNECT SWITCH |

EATON

Stock No. 44033

- Non-fused current interrupt disconnect
- Opens circuit between a battery and the complete electrical load
- Max surge 2000 amps on 20% duty, with 5 seconds on time
- 1/2" brass, tin plated stud
- 8"W x 4.19"H

150°F (65°C)
-40°F (-40°C)

50V
400A



m-LVD LOW VOLTAGE DISCONNECT



Stock No. 78008

(Blue Sea No. 7635)

- Senses low battery voltage and automatically disconnects devices to save power for starting or to preserve battery life
- Status light in both m-LVD and remote control switch provides visual warning of low voltage state prior to disconnect
- Case design allows surface, front panel, or rear panel mounting
- Waterproof rated IP67



AUTOMATIC LOW VOLTAGE DISCONNECT



The LVD is installed between the battery and all loads. If the voltage drops below the setpoint voltage for a pre-determined period of time, the LVD will open, disconnecting all loads including the LVD itself, thus protecting the batteries from any further discharge. Once the LVD has opened, the close pin can be activated, forcing the LVD to close which allows the vehicle/system to be restarted.

- Hermetically sealed chamber ensures that coil, contacts, and electronics are shielded from all outside environmental factors
- MIL-R-6106 especially suited for heavy-duty applications
- Exceeds IP69K standard
- Tested to temperatures up to 200°C
- Mating Connector DT06-08SA, 38178 or 38428

Stock No.	Volts	Amp
77150	12	350
77151	24	350



Stock No. 77150

ELECTRONIC LOW VOLTAGE DISCONNECT



Stock No. 75525

(LCH Part No. 48610)

- Preserves battery charge and protects battery banks by automatically disconnecting loads when battery voltage drops to a critical level

Use with Amphenol AT Series

- 8 pin connector, Stock No. 38178 - AT06-08SA
- Wedge, Stock No. 38190
- 18-16 awg, Stock No. 38194
- 16-14 awg, Stock No. 38196



LOW BATTERY SWITCH



Stock No. 80029

(Eaton Part No. 130512)

- Disconnects predetermined loads from the starting battery bank to ensure sufficient power for starting
- Automatically reconnects loads if vehicle is started or battery is recharged
- Prevents loads from disconnecting during starting
- Manual override for connecting or disconnecting during emergencies
- Audible or visual alarm output activates 1 minute before disconnect

185°F (85°C)
 -40°F (-40°C)
 (at 20-amp load)



LOW VOLTAGE DISCONNECT SWITCH WITH SHUT-OFF TIMER



Stock No. 80031

- Continuously monitors voltage level of a 12 volt power input
- 5 minutes fixed
- Microprocessor controller and solid state output with over-current shutdown
- 1/4" male tab contacts

185°F (85°C)
 -40°F (-40°C)



SMART BATTERY ISOLATORS

- The most flexible battery isolator solution
- Smaller, lighter and less heat generated than standard battery isolators
- Works with all alternator types
- Allows bi-directional charging from alternator or from shore/campground charging components
- LED status indicator
- Optional start assist - connect to a momentary switch that will allow the auxiliary battery to assist the starting battery



Stock No.	Amps
77050	85
77051	200



Stock No. 77050

9-16V

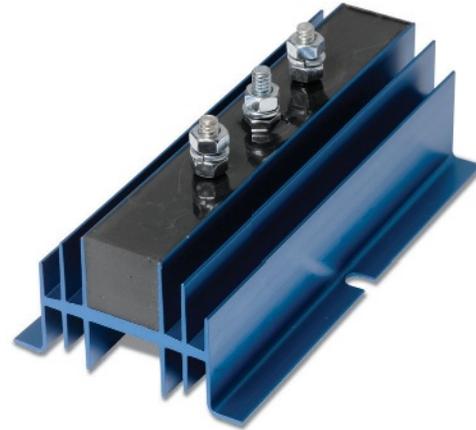
SAE J1455

SAE J1113

BATTERY ISOLATORS

- Designed for vehicles and equipment with multiple batteries – one for starting the engine and another for powering accessories
- Prevents a battery with a higher charge from draining into a battery with a lower charge
- Allows both batteries to be charged simultaneously from one source
- For use in 12-36VDC negative ground systems
- Electronic components are embedded for protection from contamination and vibration
- Integral heat sink provides efficient heat dissipation

12-36VDC

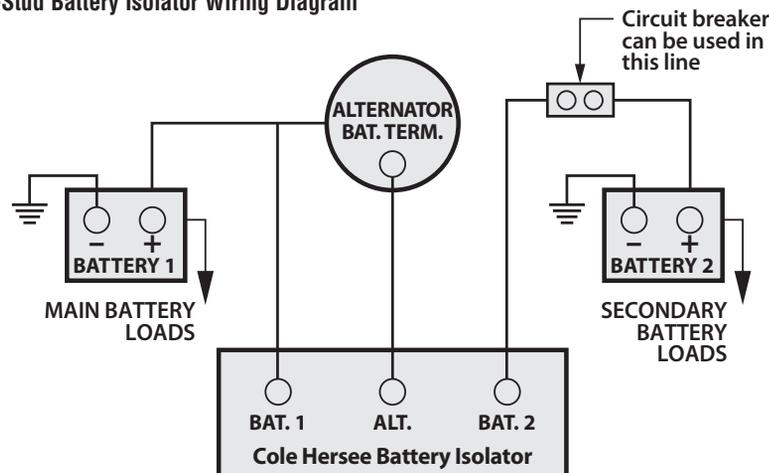


Stock No. 77053

Stock No.	LCH Part No.	Amps	Number of Studs	Notes
77053	48090	90	3	Use with alternators that do not have integral electronic voltage regulator
77054	48120	140	3	Use with alternators that do not have integral electronic voltage regulator
77056	48122	140	4	For use with Delcotron-type alternators

For vehicles with two batteries, these devices electrically isolate the batteries to prevent the battery with the higher charge from draining into that with the lower charge. In addition, both batteries can be charged simultaneously from one source

3-Stud Battery Isolator Wiring Diagram



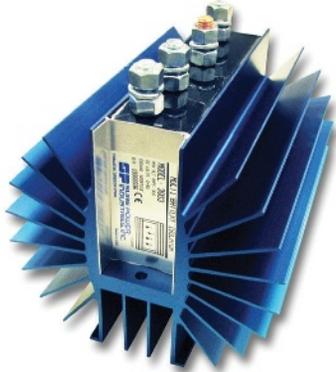
MULTI-BATTERY ISOLATORS |

The ORIGINAL, not an imitation! The battery isolator was invented by Eaton Sure Power® in 1959.

Solid state electronics isolates each battery circuit and allows each battery to discharge and charge according to its own needs. Simple and safe to operate with engineered safety margins. Required for high power vehicle applications ranging from 6V to 48V and 25A to 350A. Options include single and dual inputs and single, dual and triple output configurations.

- Eliminate battery drain when 2 or more battery banks are in a charging system
- Allows each battery to charge according to its own needs
- Vehicle and marine installation instructions available online
- Fully solid state

6-50VDC



Stock No. 80062

Battery Isolator Plug Connector Kit

Stock No. 80093

(Sure Power No. 144-CD)

- For CS Series Alternators



Stock No. 80069



Stock No. 80089

Group 1

Stock No.	Eaton Part No.	Amps	Number of Studs	Dimensions in.
80045	122	25	3	2.375L x 1.75W x 1.75H
80046	702	70	3	6.5L x 3.25W x 3.26H
80047	703	70	4	3.25L x 4.5W x 3.26H
80050	952	95	3	4L x 4.5W x 3.26H
80051	1202	120	3	6.5L x 4.5W x 3.26H
80053	2002	200	3	7.47L x 4.16W x 2.5H
80060	24023A-1B	200	4	7.48L x 4.528W x 3.346H
80061	3002	300	3	9L x 7.68W x 8.35H
80062	3003	300	4	9L x 7.68W x 8.24H
General Motors (Delcotron and Delphi)		Except Delcotron/Delphi CS Series alternators CS used on most 1985 and newer GM vehicles		
Ford		Up to 1998		
Chrysler		All models, all years, includes Nippondenso externally regulated alternators		
Jeep		Equipped with Nippondenso externally regulated alternators		
Motorola		Load Handler Series or 8EM Remote Sense Series		
Japanese Imports		With alternators using external voltage regulator or external sensing		

Group 2

Stock No.	Eaton Part No.	Amps	Number of Studs	Dimensions in.
80066*	9523A	95	4	4L x 4.5W x 3.26H
80067*	12023A	120	3	6.5L x 4.5W x 3.26H
80068*	12033A	120	5	6.5L x 4.5W x 3.26H
80069*	13023A	130	4	6.5L x 4.5W x 3.26H
80070*	13033A	130	5	6.5L x 4.5W x 3.26H
80071*	16023A	160	4	9L x 4.5W x 3.26H
* Includes Plug Connector Kit Stock No. 80093				
General Motors (Delcotron and Delphi)		Equipped with Delcotron/Delphi CS Series alternators (most 1985-1993) or CS 130-D Series alternators (most 1993 and newer)		
Ford		Many 1998 and newer		
Jeep		Vehicles equipped with Delcotron/Delphi CS Series alternator (most 1985-1990)		
Toyota, Honda and some other imports		1985 and newer equipped with Nippondenso alternator with internal regulators or alternators with an "S" (sense) terminal		

Group 3

Stock No.	Eaton Part No.	Amps	Number of Studs	Dimensions in.
80079	702R	70	4	3.25L x 4.5W x 3.26H
80083	1602	160	3	9L x 4.5W x 3.26H
Bosch		Requiring regulator sensing		
Motorola		Other than Load Handler Series		
Many European style alternators		Requiring regulator sensing		

Special Applications

Stock No.	Eaton Part No.	Amps	Number of Studs	Dimensions in.
80089	702P	70	3	3.25L x 4.5W x 3.26H
Positive ground isolators can be used as charging source combiners				

EATON® is dedicated to ensuring reliable, efficient and safe power solutions. Using their expert knowledge of electrical power management they deliver customized, integrated solutions to solve your battery management needs.



Stock # 80143

EATON is expanding their line of inverters with the NEW True Sine Wave Inverters. Designed and tested to meet SAE environmental and EMC standards, these inverters provide clean, reliable AC power to AC appliances and commercial truck applications.

- User configurable charger current, battery type, low voltage disconnects and alarms
- Providing superior output waveform quality
- AC pass through features with 12V, 40A smart battery charger options
- Ground Fault Circuit Interrupt (GFCI) protection for worry free operation



View stock at WAYTEKWIRE.COM

BATTERY SEPARATORS & INTERCONNECTS |

- Designed for use in multi-battery applications as a solenoid priority system
- Interconnect/controller: can be used as a uni-directional or bi-directional separator, or low voltage disconnect (LVD), where the solenoid opens when battery voltage drops too low, or an isolator/interconnect, which provides isolated charging of two batteries from one source
- Protection circuitry absorbs coil generated voltage spikes
- Start assist feature parallels batteries for added power during start



12V



Stock No. 80001

185°F (85°C)
-40°F (-40°C)



Stock No.	Eaton Part No.	Description	Amps
80000	1314	Battery separator uni-directional with auxiliary start	100
80001	1314-200	Battery separator uni-directional with auxiliary start	200
80002	1315	Battery separator bi-directional with auxiliary start	100
80003	1315-200	Battery separator bi-directional with auxiliary start	200
80004	3104	Interconnect/Controller	300

TRUE SINE WAVE INVERTERS |



- For DC to AC power
- Provides clean, reliable AC power in commercial truck, ag equipment and other on and off-road vehicles
- Powers all electrical loads including sleep apnea machines, tools, motors and more
- Meets SAE environmental and EMC standards
- When shore power is available, a built-in 20-amp relay automatically transfers to incoming AC utility power to minimize battery discharge and provide seamless integration; eliminates need for transfer switch
- Optional 12V battery charger with three user selectable charging profiles constant current, constant voltage and float mode
- Adjustable low voltage disconnect
- Short circuit, ground fault and automatic overload protection



12V INPUT

115V OUTPUT



Stock No. 80135

Stock No.	Eaton Part No.	Watts	Battery Charger
80135	12-110-1000	1000	None
80140	12-110-1000-B4	1000	40 amp
80142	12-110-1800	1800	None
80144	12-110-1800-B4	1800	40 amp

CONVERTERS

- Adjusts the input voltage in order to support dual voltage requirements
- Thermal overload shutdown
- Short circuit and over current protected
- Reverse polarity protected
- Over/low voltage protection
- Low standby current drain
- Loss of ground protected
- Shock and vibration resistant models available
- Environmentally protected and splash-proof sealed models available
- Other input and output configurations available



185°F (85°C) (at full current, derated)
-40°F (-40°C) at higher temperatures)



Stock No. 80116



Stock No. 80119

Stock No.	Eaton Part No.	Description	Voltage Input	Voltage Output	Output Amps
80108	21030C10	Converter	24	12	30
80111	1201040	Converter	12	24	10
80116	71030I	Converter	72	12	30
80117	41020C10	Converter	48	12	20
80119	12040C10	Converter	12	24	40

EQUALIZERS

- Maintains battery balance or “equalization” in a dual voltage battery system
- Thermal overload shutdown
- Short circuit and over current protected
- Reverse polarity protected
- Over/low voltage protection
- Low standby current drain
- Maintains battery balance while pulling loads from the batteries
- Optional output voltage shift terminal is available to aid in optimizing charging systems and serve as an ignition pin
- LED status indicator is provided to denote when the unit is producing current



185°F (85°C) (at full current, derated)
-40°F (-40°C) at higher temperatures)



Stock No. 80105



Stock No. 80109

Stock No.	Eaton Part No.	Description	Voltage Input	Voltage Output	Output Amps
80104	21060E00	Equalizer	24	12	60
80105	21080E00	Equalizer	24	12	80
80106	2110E00	Equalizer	24	12	100
80109	12040E10	Equalizer	12	24	40
80095	12010E10	Equalizer	12	24	10

TRAIL CHARGER

- Designed to counteract lost voltage over long runs of wire by stepping up the voltage at the end of a trailer
- Allows the lift gate to be charged at a full 14 volts
- Automatically adjusts voltage to optimize the charge, specifically when batteries require higher voltage at lower temperatures



185°F (85°C)
-40°F (-40°C)



Stock No. 80123

Stock No.	Eaton Part No.	Description	Voltage Input	Voltage Output	Output Amps	Stud Size in.
80123	41102	Converter	9-16	14	10	1/4 x 28
80126	11020C11	Voltage Converter/ Trail Charger	12	14	20	1/4 x 28

P12 BATTERY CHARGER

Stock No. 78052 (Blue Sea No. 7522)



- Universal line voltage 90-265VAC, 45-65 Hz for use anywhere, and is compatible with low voltage power sources
- AC over and under voltage shut down and automatic restart
- Large bright full graphic control screen with user interface
- Intuitive diagnostic screens provide a broad range of easily understood fault communications and operating history



158°F (70°C)
-4°F (-20°C)

12V
40A

AUTOMATIC TIMER DISCONNECT

Stock No. 78030 (Blue Sea No. 7615)



- IP67
- Timer Disconnect**
- 12V signal triggers relay to connect battery power to devices
- Timer ranges from 15 minutes to 4 hours

Low Voltage Disconnect

- Senses low battery voltage and automatically disconnects devices

Automatic Charging Relay

- Automatically combines two batteries when charging, and isolates them when discharging



ML-ACR AUTOMATIC CHARGING RELAY WITH MANUAL SWITCH



Stock No. 78004 (Blue Sea No. 7622)

- Manual control switch provides an added level of safety allowing control with or without power, and offering LOCK OFF capability for servicing
- 500 amp magnetic latching (bi-stable) relay automatically combines batteries during charging and isolates batteries when discharging and when starting engine
- Remote control Contura switch (Blue Sea No. 2146) included in retail package only



12VDC

140°F (60°C)
14°F (-10°C)

ML-RBS REMOTE BATTERY SWITCH WITH MANUAL CONTROL



Stock No. 78007 (Blue Sea No. 7700)

- 500 amp magnetic latching switch provides high amperage switching under load, manually or from remote locations
- Remote control Contura switch (Blue Sea No. 2146) included in retail package only

140°F (60°C)
14°F (-10°C)



ML Series Link BUS
Stock No. 78009



12VDC

ON-BOARD BATTERY CHARGERS

NEW

- Fully automatic 5-stage performance charging
- Dedicated battery charging, sensing and control per bank with LED display
- 100% waterproof (IP67) and shock resistant for all fresh and saltwater applications
- For all 12V flooded and AGM lead acid batteries



12-24VDC 120V INPUT

Stock No. 78080

Stock No.	Marinco Part No.	Current Rating	Current per Battery Bank	Number of Battery Banks
78080	2707A	8A	4A	2 Banks
78081	2708A	5A	5A	1 Bank
78082	2710A	10A	10A	1 Bank
78083	2711A	10A	5A	2 Banks

INVERTERS

NEW

- Designed to convert 12VDC battery power to 115VAC and will automatically pass through AC inlet power when present
- Internal 30A AC transfer switch will automatically pass through AC inlet power when present
- USB power port and GFCI convenience outlets
- Compact and lightweight design
- On/Off TruePower
- Remote included with 9-foot cable

ProMariner



Stock No. 78600

Stock No.	ProMariner Part No.	Wave	Watts	Volts
78600	07100	Pure Sine	1000	12
78601	07200	Pure Sine	2000	12
78602	06120	Modified Sine	1200	12
78603	06150	Modified Sine	1500	12
78604	06200	Modified Sine	2000	12

SUREJECT™

The reliability you require and features you desire.

- Automatic AC disconnect ejects power cords upon ignition to prevent damage
- Motor driven design ensures years of reliable operation
- The ejection piston is self-recessing, with no cocking required
- Keyed plug design allows for easy one-hand insertion
- No lubrication or self-service required
- Built in status LED indicates the presence of AC power and ejection alerts
- Automatically attempts additional ejections if needed
- Compatible with existing 15A and 20A connectors already in the station
- Standard mounting holes for simple retrofit
- Label kit, connector, and standard hardware included
- Pigtails offer a secondary method of disconnecting from shore power for added reliability (sold separately)
- 6 different color covers available



For more information, visit waytekwire.com/surejects



SURE EJECT™ AUTOMATIC AC DISCONNECT SYSTEMS |

NEW

Blue Sea Systems Sure Eject™ series automatic AC disconnects feature a time saving automatic ejection system that is cost effective and protects your equipment. The Sure Eject™ charging system is ignition triggered so when the vehicle is turned on the power cord will automatically be disconnected, protecting your electrical system. The motorized design ensures that drivers will not drive away when they are still plugged in and provides a reliable disconnect in all conditions.

- Keyed plug design for easy one-handed insertion in hard to reach places



Spare Plugs

Stock No.	Blue Sea Part No.	Amps
78016B	7840B	15
78017B	7841B	20

8-16VDC
120VAC



Stock No. 78015B

Complete Systems (Body, Plug & Cover)

Stock No.	Blue Sea Part No.	Amps
78018	7850	15
78019	7851	20

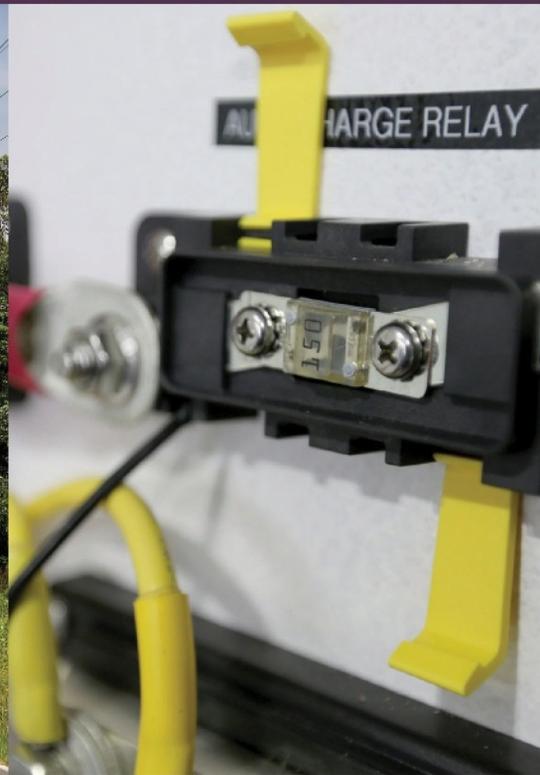
Extra Covers

Stock No.	Blue Sea Part No.	Color
78011B	7820B	Yellow
78012B	7821B	Red
78013B	7822B	Black
78014B	7823B	White
78015B	7824B	Blue

FUSES

In-Line Fuse Holders	158-159
Micro2®	160
Micro3®	160
Low Profile MINI®	160
MINI®/ATM Fuses	160, 162
ATOF/ATO®/ATC Fuses	161-162
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MCASE® Fuses	163
JCASE® Fuses	163
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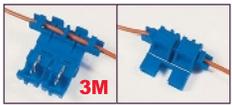
Break Apart Fuses	164
Panel Mount Fuses	164
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MIDI®/AMI High Amp Fuses	167
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ZCASE® Fuses	170-171



IN-LINE FUSE HOLDERS

Micro2® Fuse Holders	Volts/ Amps	Stock No.	Description
	32V 15A	46488	16 ga Red Wire 5" Leads

MINI® Fuse Holders	Volts/ Amps	Stock No.	Description
	24V 15A	46056	16 ga Red GXL Wire LED Light 4" Leads
	32V 20A	46036	Easy Crimp For 22-16 ga Wire
	32V 20A	46487	16 ga Black GXL Wire 4" Leads
	32V 20A	46489	14 ga Black GXL Wires 4.78" Leads
	12V 20A	46277	14 ga Orange UL1015 Wire 6" Leads
	32V 30A	46486	12 ga Orange GXL Wire 4" Wire Leads

ATO®/ATC Fuse Holders	Volts/ Amps	Stock No.	Description
	32V 20A	46031	Self Stripping For 18-14 ga Wire
	32V 10A	46229	18 ga Tinned UL1015 Red Wire 4" Leads
	32V 20A	46447	16 ga Black GPT Wires 4" Leads
	24V 15A	46054	Red LED Light When Blown Fuse 4" 16 ga Red GXL Wire
	32V 20A	46449	16 ga Black GXL Wires, 4" Leads
	32V 30A	46239	14 ga Tinned UL1015 Wire 4" Yellow Leads
	32V 20A	46459	14 ga Black Wire Stackable
	32V 30A	46460	10 ga Orange Wire Stackable

ATO®/ATC Fuse Holders - cont.	Volts/ Amps	Stock No.	Description
	32V 30A	46032	12 ga GPT Wire 8" Leads
	30A	46046	12 ga Orange GPT Wire 11" Loop
	32V 30A	46278	12 ga Red UL1015 Wire 4" Leads
	32V 40A	46292	12 ga Orange GXL Wire 4" Leads
	32V 30A	46448	12 ga Orange GPT Wires 4" Leads
		46019	Cover for Stock No. 46448
	32V 30A	46238	10 ga Tinned UL1015 Red Wire 12" Loop

MAXI® Fuse Holders	Volts/ Amps	Stock No.	Description
	80A	46048	8 ga Red Wire 12" Loop
	32V 60A	46049	6 ga Tinned UL1015 Black Wire, 5" Leads
	32V 60A	46022	6 ga Tinned UL1015 Red Wire, 5" Leads
	32V 60A	46024	6 ga Bare Red STX Wire, 5" Leads

AGC Style Fuse Holders	Volts/ Amps	Stock No.	Description
	32V 30A	46003	Accepts 18-12 ga Wire (box of 100)
		46003-L	Accepts 18-12 ga Wire (loose piece)
	32V 30A	46004	Waterproof Accepts 18-12 ga Wire
		46005	Additional fuse clips available separately
	32V 20A	46000	14 ga Red GPT Wire 8" Loop (complete assembly)
		46009	Rivet
		46014	Body
		46015	Spring
	250V 20A	46002	14 ga Red UL1015 Wire 18" Loop
	250V 30A	46069	14 ga Red GPT Wire 8" Loop

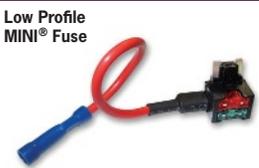
FUSE HOLDERS

JCASE® Fuse Holders	Volts/ Amps	Stock No.	Description
	58V 60A	46150	8 ga Red GXL Wire 4' Leads

Fuse Holder Assemblies	Volts/ Amps	Stock No.	Description
MINI® Fuses 	16V 30A	46041	12 ga Orange GXL Wire 10" Wire Leads (Complete Assembly)
		38063	Body
		46058	Cap
		31075	12 ga Terminals
		39002	Cable Seal
		38035	TPA Clip
ATO®/ATC Fuses 	32V 30A	46033	12 ga Orange GPT Wire 8" Wire Leads (Complete Assembly)
		46047	12 ga Orange GXL Wire 9" Wire Leads (Complete Assembly)
		46010	Body with Seals
		46034	Cap
		32037	12 ga Terminals
		407	Crimper

MAXI® Fuse Blocks	Volts/ Amps	Stock No.	Description
	32V 60A	46011	MAXI Fuse Block Holder
		46012	Cover for Stock No. 46011
	32V 80A	78150	Insulates to ABYC/USCG Requirements Accepts 18-4 ga Wire
			Insulates to ABYC/USCG Requirements with Included Cover

CIRCUIT TAPS

Circuit Taps	Volts/ Amps	Stock No.	Description
	32V 20A	46177	16 ga Red UL1015 Wire 5" Leads with Butt Connector
	50V 20A	46178	16 ga Red UL1015 Wire 2 - 5" Leads with Butt Connector
	58V 30A Add on 30A	46404	16 ga Red UL1015 Wire 2 - 5" Leads with Butt Connector
	32V 30A Max Combined	46044	16 ga UL1015 Red Wire with Butt Connector
	32V 30A Max Combined	46068	16 ga Wire with Butt Connector
	32V 30A Max Combined	46045	16 ga Red Wire with Butt Connector
	58V 30A Add on 30A	46040	16 ga Red UL1015 Wire

MICRO2® FUSES

SAE 2741 **32V**

257°F (125°C)
-40°F (-40°C)

- New standard for vehicle circuit protection
- Sub-miniature design
- Space saving - allows more fuses to fit in a smaller space
- Used as a replacement fuse in new vehicles
- Color coded for easy identification

Amps	Stock No.	Color
5	46116	Tan
7.5	46117	Brown
10	46118	Red
15	46119	Blue
20	46126	Yellow
25	46127	Clear
30	46128	Green



MICRO3® FUSES

SAE 2741 **32V**

257°F (125°C)
-40°F (-40°C)

- 3 terminals and 2 fuse elements with a common center terminal
- Space saving with sub-miniature design
- Meets the need for more circuits to be protected while utilizing less space

Amps	Stock No.	Color
5	46121	Tan
7.5	46122	Brown
10	46123	Red
15	46124	Blue



LOW PROFILE MINI® FUSES

58V

257°F (125°C)
-40°F (-40°C)

- Similar performance characteristics as standard MINI® fuses
- Low overall height allows for space and weight savings
- Typically used as a replacement fuse in new vehicles

Amps	Stock No.	Color
5	46293	Tan
7.5	46294	Brown
10	46295	Red
15	46296	Blue
20	46297	Yellow
25	46298	Clear
30	46299	Green



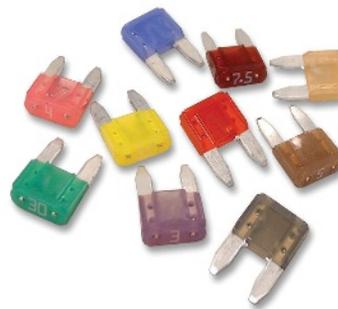
MINI® AUTOMOTIVE FUSES

SAE J2077 **32V**

257°F (125°C)
-40°F (-40°C)

- Smaller than the standard automotive blade fuses, permitting more fuses in the same space
- Color coded for amperage

Amps	Stock No.	Color
2	46250	Gray
3	46251	Violet
4	46252	Pink
5	46253	Tan
7.5	46254	Brown
10	46255	Red
15	46256	Blue
20	46257	Yellow
25	46258	Clear
30	46259	Green



FUSES

MINI® SMARTGLOW FUSES

12V

257°F (125°C)
-40°F (-40°C)

- Indicator light on the top of the fuse glows brightly if the fuse is blown
- Eliminates guess work and speeds the replacement of the blown fuse
- Color coded for amperage
- Snaps into place without special tools
- Provides easy identification of blown fuses in hard-to-reach locations

Amps	Stock No.	Color
3	46260	Violet
5	46261	Tan
7.5	46262	Brown
10	46263	Red
15	46264	Blue
20	46265	Yellow
25	46266	Clear
30	46267	Green



MINI® Fuse Clip Stock No. 37062

- 3/16" push on blade



MINI® Tapper Fuse Tap Stock No. 37065

- Taps into power at the fuse block
- 3/16" push-on



ATOF/ATO® AUTOMOTIVE FUSES

- Found on most cars, trucks, buses and off-road vehicles worldwide
- Standard ¼" blade type
- Higher chemical and heat resistance than previous ATO® style



Amps	Stock No.	Color
1	47001	Black
2	47002	Gray
3	47003	Violet
4	47004	Pink
5	47005	Tan
7.5	47007	Brown
10	47010	Red
15	47015	Blue
20	47020	Yellow
25	47025	Clear
30	47030	Green
35	47035	Blue/Green
40	47040	Amber



MAXI® AUTOMOTIVE FUSES

- Provides predictable time delay characteristics and low heat dissipation
- Used where a high amperage circuit is required from 20-80 amps
- Color coded for amperage



Amps	Stock No.	Color
20	46240	Yellow
25	46226	Grey
30	46241	Green
35	46227	Brown
40	46242	Orange
50	46243	Red
60	46244	Blue
70	46245	Tan
80	46246	Clear



5 PIECE BOXES - AUTOMOTIVE FUSES



MINI® Fuses

Amps	Stock No.	Color
2	47268	Gray
3	47269	Violet
4	47270	Pink
5	47271	Tan
7.5	47277	Brown
10	47272	Red
15	47273	Blue
20	47274	Yellow
25	47285	Clear
30	47276	Green

ORDERING NOTES

Quantity 1 = 1 box of 5 fuses

Low Profile MINI® Fuses

Amps	Stock No.	Color
2	47278	Gray
5	47279	Tan
7.5	47285	Brown
10	47280	Red
15	47281	Blue
20	47282	Yellow
25	47283	Clear
30	47284	Green

ORDERING NOTES

Quantity 1 = 1 box of 5 fuses

ATOF/ATO® Fuses

Amps	Stock No.	Color
5	47260	Tan
7.5	47267	Brown
10	47261	Red
15	47262	Blue
20	47263	Yellow
25	47264	Clear
30	47265	Green
40	47266	Amber

ORDERING NOTES

Quantity 1 = 1 box of 5 fuses

ATOF/ATO® SMARTGLOW FUSES

- Indicator light on the top of the fuse glows brightly if the fuse is blown
- Eliminates guess work and speeds the replacement of the blown fuse

32V



Amps	Stock No.	Color
3	46280	Violet
5	46281	Tan
7.5	46282	Brown
10	46283	Red
15	46284	Blue
20	46285	Yellow
25	46286	Clear
30	46287	Green



Fuse Clip

Stock No. 37061

- ¼" push-on terminal
- Use to tap off on side of ¼" blade fuse



Tripuller/ ATOF/ATO® Fuse Puller

Stock No. 580

- Allows for easy fuse removal and replacement



MAXI® Blade Fuse Puller

Stock No. 581

- Designed for easy removal and replacement of MAXI® blade style fuses



MAXI® SLO-BLO® AUTOMOTIVE FUSES

- Ideal for motor powered applications which have large inrush currents
- Indicator light glows when the fuse is blown, saving time to troubleshoot an open circuit
- Color coded for amperage



Amps	Stock No.	Color
20	46232	Yellow
30	46233	Green
40	46234	Orange
50	46235	Red
60	46247	Blue
70	46248	Tan
80	46249	Clear

FUSES

ATM AUTOMOTIVE BLADE TYPE FUSES

- UL recognized for use in low voltage control circuits
- ISO 8820 / JASO D612 / SAE J2077 and J1171
- Ignition protection

32V



Amps	Stock No.	Color
2	47425	Gray
3	47426	Violet
4	47427	Pink
5	47428	Tan
7.5	47429	Brown
10	47430	Red
15	47431	Blue
20	47432	Yellow
25	47433	Clear
30	47434	Green

AUTOMOTIVE ATC BLADE FUSES CLEAR WITH TEST POINTS

- Closed body housing with test points
- Ignition protected

32V



Amps	Stock No.	Color
5	47415	Tan
7.5	47416	Brown
10	47417	Red
15	47418	Blue
20	47419	Yellow
25	47420	Clear
30	47421	Green

FUSE TESTER

24V

Stock No. 447

- Tests and removes:
 - blade (ATC, ATOF® ATM and MAX)
 - glass (1¼", 1" and 5 mm x 20 mm)



ATC FUSE ASSORTMENT KITS

Stock No. 22270

- Includes 42 fuses and fuse tester



ATC Fuse Assortment Kit Includes:

Amps	# of Pieces
5	7
10	7
15	7
20	7
25	7
30	7

ATC AUTOMOTIVE BLADE FUSES

32V

- UL recognized for use in low voltage control circuits
- Lead free, halogen free
- RoHS compliant



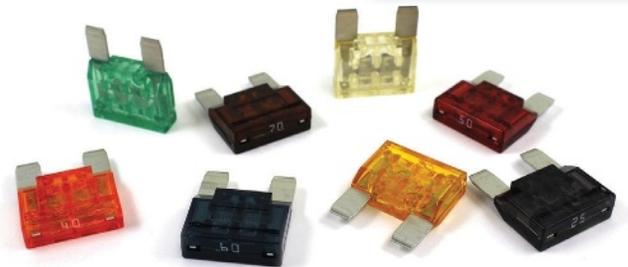
Amps	Stock No.	Color
1	47400	Black
2	47401	Gray
3	47402	Violet
4	47403	Pink
5	47404	Tan
7.5	47405	Brown
10	47406	Red
15	47407	Blue
20	47408	Yellow
25	47409	Clear
30	47410	Green
35	47411	Blue/Green
40	47412	Amber

AUTOMOTIVE MAX BLADE TYPE FUSES

32V

- Heavy-duty fast acting MAX fuse
- Features see-through body allowing for fuse to be inspected more conveniently
- UL-Rated 94V-0 thermoplastic
- SAE J1888, ISO 8820-3

Amps	Stock No.	Color
20	47440	Yellow
25	47441	Grey
30	47442	Green
40	47444	Orange
50	47445	Red
60	47446	Blue
70	47447	Tan
80	47448	Clear



FUSE ASSORTMENT KITS

Stock No. 22269

- Our most popular ATOF®/ATC, MINI® and MAXI fuses in a convenient kit
- Great for repair jobs when a variety of fuses are needed

Fuse Assortment Kit Includes:

Type	Amps	# of Pieces
MAXI Fuses	30	5
	40	5
	50	5
	60	5
MINI® Fuses	5	20
	10	20
	15	20
	20	20
ATOF/ATC Fuses	5	20
	10	20
	15	20
	20	20



MCASE® FUSES

- Cartridge style fuse with female terminals for 2.8 mm male terminals
- Miniaturized footprint for optimal usage of space
- Time delayed fuse

32VDC



Amps	Stock No.	Color
15	46360	Gray
20	46361	Blue
25	46362	White
30	46363	Pink
40	46364	Green

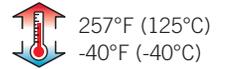


SLOTTED MCASE®+ CARTRIDGE FUSE

NEW

- Cartridge style fuse up to 60A with female terminals for 2.8 mm male terminals
- Miniaturized footprint for optimal usage of space
- Handles inrush currents

32VDC



Amps	Stock No.	Color
15	46600	Gray
20	46601	Blue
25	46602	Tan
30	46603	Pink
40	46604	Green
50	46605	Red
60	46606	Yellow
Shunt	46607	Black



LOW PROFILE JCASE® CARTRIDGE STYLE FUSES

- Lower overall height allows for space and weight savings



58V

Amps	Stock No.	Color
20	46300	Blue
25	46305	White
30	46301	Pink
40	46302	Green
50	46303	Red
60	46304	Yellow



JCASE® CARTRIDGE STYLE FUSES

- JCASE® provides both increased time delay and low voltage drop to protect high current circuits



JCASE®

32V

Amps	Stock No.	Color
20	46590	Blue
25	46595	White
30	46591	Pink
40	46592	Green
50	46593	Red
60	46594	Yellow

In-Line JCASE® Fuse Holder With Cover

Stock No. 46150

- For use with low-profile JCASE® fuses or standard JCASE® fuses
- 8 ga GXL wire, 4" leads
- Standard thru-hole mounting



58V

60A



JCASE® Fuse Puller

Stock No. 582

- Designed for easy removal and replacement of JCASE® style fuses

2 + 2 FUSE HOLDER FOR MINI® AND JCASE® FUSES

- Compact holder houses two JCASE® cartridge fuses and two MINI® bladed fuses
- Holder is gasket-sealed to protect fuses from moisture and contamination
- Fuses are internally bussed to a single main power stud, one input powers four fused circuits

32VDC

2-60A



Fuse Holder
Stock No. 46089

MINI® Fuse Terminals

Wire Gauge	Tin Plated Female Terminal Stock No.
18-16	30037
14-12	31075
12-10	32035

JCASE® Terminals

Wire Gauge	Tin Plated Male Terminal Stock No.
14-16	32062
12-10	32064

Cable Seals

Cable Diameter	Color	Stock No.
1.70 - 1.29 mm	Dark Red	39004
2.80 - 2.03 mm	Green	39000
3.49 - 2.81 mm	Gray	39001
4.30 - 3.45 mm	Blue	39002

Cable Seals

Cable Diameter	Color	Stock No.
2.40-1.60 mm	Brown	39030
2.90-2.00 mm	Dark Red	39031
3.80-2.80 mm	Gray	39032
4.50-3.60 mm	Blue	39018

Cavity Plug	Stock No.
	39010



Crimp Tool
Stock No. 385

GLASS AND CERAMIC FUSES |



Type AGC

- 1/4" dia. by 1 1/4" long
- Fast-acting glass tube fuses
- UL Listed product meets standard 248-14



Amps	Volts	Stock No.
1/10	250	46131
1/4	250	46132
1/2	250	46133
1	250	46101
2	250	46102
3	250	46103
4	250	46104
5	250	46105
7 1/2	250	46137
8	250	46108
10	250	46110
15	32	46115
20	32	46120*
25	32	46125
30	32	46130
40	32	46140
50	32	46139

* same as SFE 20

Type MDA

- 1/4" dia. by 1 1/4" long, time delay
- Ceramic tube fuses
- UL Listed product meets standard 248-14



Amps	Volts	Stock No.
1	250	46151
2	250	46152
3	250	46153
5	250	46155
10	250	46160
15	250	46165

Tripuller / Fuse Puller

Stock No. 580

- Allows for easy fuse removal and replacement
- Extracts glass or ceramic, ATO® and MINI® style fuses from fuse blocks



BREAK APART FUSE BLOCKS |



- Low cost option to fuse your product
- Supplied in standard length of 12 poles
- Snaps apart for the number of circuits you require

Stock No. 47065

- For AGC type fuses 1/4" dia. by 1 1/4" long
- #6 screw terminal
- Mounting holes .146" dia. on 5/8" spacing

300V
30A

12V

#6 Screw
Terminals



PANEL MOUNT FUSE HOLDERS |



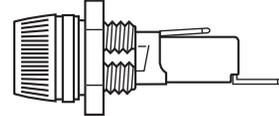
- For AGC type fuses, 1/4" dia. by 1 1/4" long



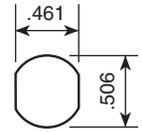
Stock No. 46018

- 1/4" push-on terminals
- Threaded mount

250V
20A



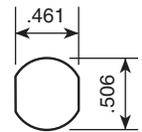
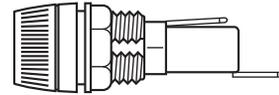
Mounting Holes



Stock No. 46023

- 3/16" push-on terminals
- Threaded mount

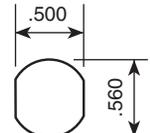
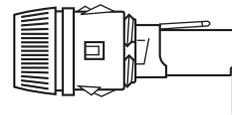
250V
15A



Stock No. 46017

- 1/4" 90 degree push-on terminals
- Push mount

250V
20A



REPLACEMENT TYPE II BREAKER FOR GLASS FUSES |



- Fits in holders which accommodate 1/4" dia. by 1 1/4" long glass fuses
- Remains open until the trouble is corrected or the power is turned off
- Direct replacement for most OEM applications



Amps	Stock No.
10	46710
15	46715
20	46720
30	46730
40	46740

FUSE CLIPS |

- For use with 1/4" dia. glass fuses



Half Clip
Stock No. 37060



Full Clip
Stock No. 37063

T-TRON™ CLASS T FUSE CURRENT LIMITING FAST ACTING |



- Small, space-saving fuses provide a high degree of current limitation on short-circuits for excellent component protection
- Commonly applied in electric heat circuits, load center, disconnect switches, and meters
- Small size of the JN Class T fuses permits installation in panelboards and control centers for system upgrading when existing circuit breakers cannot safely interrupt larger available short-circuit currents
- High speed of response for semiconductor protection

Stock No.	Amp
45585	225
45586	250
45587	300
45588	350
45589	400



Stock No. 45588

CLASS T FUSE HOLDER |

- Cover (sold separately) protects conductive areas from accidental shorts and complies with ABYC & USCG requirements
- Accepts battery lugs and eyelets up to 4/0
- 3/8" stud
- Glass filled nylon base material
- Stainless steel connection bolts



Holder
Stock No. 45584



Cover
Stock No. 45583



See Battery Lugs on page 36.

ANN AND ANL LIMITER FUSES |



- High amperage ratings in a compact size, just 7/8" x 3 1/16"
- Ideal for heavy-duty applications
- Clear window provides open-fuse indication

ANN Fuses Very Fast Acting

80V DC
125V AC



ANN Fuses	
Amps	Stock No.
10	46161
35	46162
40	46163
50	46164
60	46167
80	46168
90	46169
100	46180
125	46181
150	46182
175	46187
200	46183
225	46197
250	46184
300	46185
325	46188
350	46189
400	46186
500	46200
600	46206
700	46208
800	46209

ANL Fuses Time Delay

80V DC
32V AC



ANL Fuses	
Amps	Stock No.
35	46211
40	46212
50	46213
60	46190
80	46214
100	46191
150	46192
175	46193
200	46194
225	46159
250	46195
300	46196
325	46216
350	46217
400	46218
500	46219
600	46221
675	46222
750	46223



ANN and ANL Fuse Holder Stock No. 46097

80V DC
125V AC
800A

- Furnished with lock nuts
- Molded thermoplastic base
- Two countersunk mounting holes on 1" centers for #10 flat head screws



ANN and ANL Fuse Holder Stock No. 45602

12V DC
300A

- Accepts 5/16" (M8) Ring Terminal
- UL Rated 94HB



ANN and ANL Cover and Boot Kit Stock No. 45601



Heavy-Duty ANN and ANL Fuse Holder Stock No. 46224

80V DC
125V AC
800A

- Furnished with lock nuts
- Solid core construction
- Two countersunk mounting holes on 1" centers for #10 flat head screws
- 5/16" stud

ANL Fuse Block with Insulating Cover

- Accepts 5/16" (M8) ring terminals
- 2/0 maximum cable size
- Fuse sold separately



Stock No. 78159

Stock No.	Blue Sea Part No.	Amps
78159	5005	35 amp to 300 amp
78160	5503	35 amp to 750 amp

BOLT DOWN FUSES |

NEW

CNL Fast Acting, CNN and CNNE Very Fast Acting fuses are recommended for use on battery operated lift trucks and other low voltage battery operated equipment.

- Compact size saves space

Application

- Lift trucks
- Scissors lifts
- Pallet movers

CNL Fuse Fast Acting

32V



Amps	Stock No.
35	47498
40	47499
50	47500
60	47501
80	47504
100	47505
125	47506
150	47508
175	47509
200	47510
225	47511
250	47512
275	47513
300	47514
325	47515
350	47516
400	47517
500	47518

CNN Fuse Very Fast Acting

48V



Amps	Stock No.
10	47521
35	47522
40	47523
50	47524
60	47525
80	47526
90	47527
100	47528
125	47529
150	47530
175	47531
200	47532
225	47533
250	47534
275	47535
300	47536
325	47537
350	47538
400	47539
500	47540
600	47541
700	47542
800	47543

CNNE Fuse Very Fast Acting

80V



Amps	Stock No.
35	47470
40	47471
50	47472
60	47473
80	47474
90	47475
100	47476
125	47477
150	47478
175	47479
200	47480
225	47481
250	47482
275	47483
300	47484
325	47485
350	47486
400	47487
500	47488
600	47489
700	47490
800	47491

FUSES

Fuse Holder for CNN, CNL & CNE Fuses

Stock No. 47550

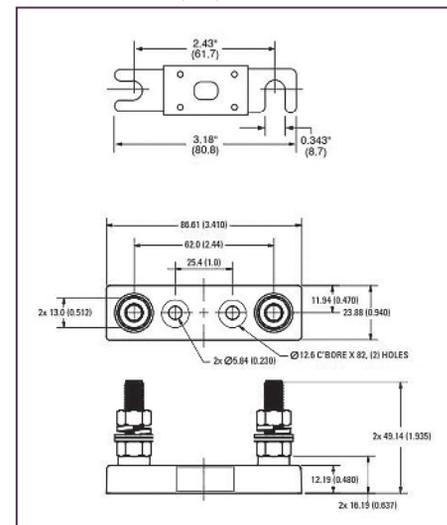
- The LFFB series fuse block is designed to accept bolt-down style limiter fuses. Specifically designed for use with CNL, CNN & CNNE series fuses
- Max current: 800A
- M8 studs



150V



Dimensions - inches (mm)



MIDI® HIGH AMP FUSES

- Time delay characteristics
- Bolt-on space saving fuse for high current application

32V
Interrupting Rating
1000A at 32 V



Amps	Stock No.
30	46380
40	46381
50	46382
60	46383
70	46384
80	46385
100	46386
125	46387
150	46388
175	46379
200	46389

CLEAR MIDI® HIGH AMP FUSES

- Time delay characteristics
- Bolt-on space saving fuse for high current application
- Transparent nylon composite cover

32V
Interrupting Rating
1000A at 32 V



Amps	Stock No.
30	45964
40	45965
50	45966
60	45967
70	45968
80	45969
100	45970
125	45971
150	45972
175	45974
200	45973

MIDI® INLINE FUSE HOLDER

Stock No. 46312

- Designed for use with bolt down MIDI® style fuses
- Install directly inline with battery cable, no mounting required
- Can be used with heat shrink tubing for applications requiring more splash resistance
- Curved design of the cover aids in preventing of tube-splitting during application
- M5 threaded studs with hex nuts

257°F (125°C)
-40°F (-40°C)



32V
200A



MIDI® HIGH AMP FUSE HOLDER

Stock No. 46008

- M5 threaded studs with hex nuts
- Holders click together at base
- ¼" mounting hole

257°F (125°C)
-40°F (-40°C)

32V
200A



MIDI® AMI/MEGA® AMG SEALED FUSE BLOCKS

- Drop-in replacement for existing non-sealed competitive solutions
- Ignition protected to SAE J1171 and ISO 8846 for installation on vehicles carrying hazardous payloads or for installation inside battery compartments
- Storage space for spare fuse and attachment screw
- IP66/IP6K9K
- M8 stud



Stock No. 46353
Accepts AMI or MIDI® Fuses

Stock No. 46352
Accepts MEGA® or AMG Fuses



FLEX MIDI® FUSE HOLDERS

Stock No. 45610

- Features interconnecting pins on side of fuse block for secure multiple block configurations

257°F (125°C)
-40°F (-40°C)

32V
200A



Flex MIDI® Busbar

• For use with Stock No. 45610

Positions	Stock No.
2	45611
3	45612

AMI/MIDI® SAFETY FUSE BLOCK

Stock No. 78157

(Blue Sea No. 7720)



- Ignition protected for installation aboard gasoline or diesel powered equipment, vehicles, etc.
- Sealed cover protects fuses from the harsh marine environment
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- Maximum amperage: 200A with 2/0 cable
- Fuses sold separately
- 4/0 cable
- M8 stud

32VDC
200A



FUSES

AMG HIGH AMP FUSES



- For high current applications
- Use with Eaton fuse holder
Stock No. 46039

↑ 180°F (82°C)
↓ -25°F (-32°C)



Amps	Stock No.
100	46270
125	46271
150	46272
175	46273
200	46274
225	46275
250	46276
300	46279
400	46290
500	46291

MEGA® HIGH AMP RIVETED FUSES



- Ideal for battery and alternator cables or other heavy gauge cables requiring ultra-high current protection
- Slo-Blo features eliminates nuisance blowing during temporary, short duration overloads

↑ 257°F (125°C)
↓ -40°F (-40°C)



Amps	Stock No.
60	47045*
80	47041*
100	47042
125	47043
150	47044
200	47046
225	47048

* Non rivited

BF2 MEGA® STYLE SLO-BLO®



- Ideal for battery and alternator cables or other heavy gauge cables requiring ultra-high current protection

↑ 257°F (125°C)
↓ -40°F (-40°C)



Amps	Stock No.
100	45000
125	45001
150	45002
175	45003
200	45004
225	45005
250	45006
300	45007
400	45008*
500	45009*

* Opaque housing

MEGA® FUSE HOLDERS



Stock No. 46039

- High amp mountable fuse holder
- Comes with black rubber cover for protection
- Cables can be attached from the front, side or the back
- Nuts included, 5/16" thread size
- 1/4" mounting hole

↑ 257°F (125°C)
↓ -40°F (-40°C)



FLEX MEGA® FUSE HOLDER



Stock No. 45616

- Dovetail features allow you to interlock multiple Flex holders together to create a high-power distribution block

↑ 257°F (125°C)
↓ -40°F (-40°C)



Flex MEGA® Busbar

- For use with **Stock No. 45616**

Positions	Stock No.
2	45613
3	45614



MEGA® FUSE HOLDERS



Stock No. 46038

- Convenient mounting for high amp fuses
- Black glass filled thermoplastic construction with black cover for protection
- Includes nuts and washers, M8 thread size
- 1/4" mounting hole



MEGA®/AMG FUSE BLOCK



Stock No. 78161

(Blue Sea No. 5001)

- Insulating cover satisfies ABYC/USCG insulation requirements
- Insulating cover breakouts allow wire access in three directions
- UL 94-V0 base resists high heat
- Fuses sold separately
- M8 stud



MEGA®/AMG SAFETY FUSE BLOCK



Stock No. 78162

(Blue Sea No. 7721)

- Ignition protected for installation aboard gasoline or diesel powered equipment, vehicles, etc.
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- M8 terminal stud/screw size
- Fuses sold separately



MARINE RATED BATTERY FUSES (MRBF) |



- High amp circuit protection in small component
- For demanding environments or tight space constraints
- Use for main or auxiliary circuits

Amps	Stock No.
30	45551
40	45552
50	45553
60	45554
75	45556
80	45557
90	45558
100	45559

Amps	Stock No.
125	45560
150	45561
175	45562
200	45563
225	45564
250	45565
300	45566

MARINE RATED BATTERY FUSE (MRBF) HOLDERS & COVERS |



- Mounting bars/holders for MRBF
- 2-stud mounting bars must have 2 fuses

One Fuse Mounting Bar/Holder	Stock No.	Description
	45567	3/8" Mounting Hole 1/4-20 Stud Size
	45575	3/8" Mounting Hole M8 Stud Size
	45568	1/2" Mounting Hole 1/4-20 Stud Size
	45571	Red Cover
	45573	Black Cover

Two Fuse Mounting Bar/Holder	Stock No.	Description
	45569	3/8" Mounting Hole 1/4-20 Stud Size
	45570	1/2" Mounting Hole 1/4-20 Stud Size
	45572	Red Cover
	45574	Black Cover

MRBF SURFACE MOUNT FUSE BLOCK |



Compact circuit protection that gives an easy and economical solution for satisfying the "ABYC 7" circuit protection rule.

- Provides high current protection for the tightest space constraints
- Versatile wiring options allow all wires to come out a single side
- Maximum amperage: 300A per block, 240A per circuit
- Mounting: surface mount M5 (#10)
- Terminal stud size: M8 (5/16"-18)
- Fuses sold separately



Stock No.	Blue Sea Part No.	Circuits
78261	5196	3 circuits with common power supply
78262	5194	3 circuits with independent power supply



Stock No. 78261

Stock No. 78262

FUSES

BMZ SERIES ZCASE® MEGA STARTER FUSES

- Minimal footprint
- Fuse design is optimized for a one bolt connection
- Tin plated copper
- Full family (40-600A) available upon request



**32V
2000A**

Amps	Stock No.
125	45590
150	45591
175	45592
200	45593
225	45594
250	45595
400	45621
600	45623



BMZ FUSE HOLDER & STUD ASSEMBLY / BMZ SERIES

Assembly Instructions

1. Place the battery terminal on the stud & busbar assembly; 2 positions bolt the two pieces together.
2. Place ZCASE® fuse to the battery.
3. Mount the assembly to the battery.
4. Attach cables with ring terminals over the top of the fuses onto the studs.
5. Thread nuts and lock washers to the top of the studs and torque to 12+/-2 Nm (8.85/-1.48 foot-pounds).

Positions	Stock No.
2	45598
3	45597



(M8 Nuts Not Included)

Typical ZCASE Assembly



Cover
Stock No. 45599

BMZ SERIES ZCASE® FUSE HOLDER KITS

NEW

- Kit includes busbar, terminal mount and red cover
- Allows fuse mounting directly to a post style battery terminal without need for additional hardware
- Fuse mounting nuts are included with the boxed kits. Nuts need to be source separately when ordering individual components

Positions	Stock No.
3	45624
2	45625



Stock No. 45624

ZCASE® BATTERY TERMINAL / BMZ SERIES

Stock No. 45596

Assembly Instructions

1. Place the battery terminal on the stud & busbar assembly; 2 positions bolt the two pieces together.
2. Place ZCASE® fuse to the battery.
3. Mount the assembly to the battery.
4. Attach cables with ring terminals over the top of the fuses onto the studs.
5. Thread nuts and lock washers to the top of the studs and torque to 12+/-2 Nm (8.85/-1.48 foot-pounds).



SMZ SERIES ZCASE® FUSE HOLDER KITS

NEW

80V



221°F (105°C)
-40°F (-40°C)

- Compact design saves space and eliminates the need to wire in a separate fuse holder or power distribution module
- Fusing directly on the alternator, battery switch or relay reduces the number of wire connections and parts, which helps to lower assembly times
- Quickly and easily add additional circuits to an existing system, reducing your installation time and cost
- Uses high amp ZCASE fuses
- Tin plated coating on the busbar

Stock No.	Stud	Amp	Notes
45576	M8	400	with fuse cover
45577	M8	400	---
45578	M10	400	with fuse cover
45579	M10	400	---



Stock No. 45576



Stock No. 45577



BMZ Fuse Holder

Flexibility for your High Current Power Distribution Needs



SMZ Fuse Holder



ZCASE Fuses
40A-600A



Available
Summer 2019
FHZ Series
5 Stud ZCASE

HARD-WIRED MODULES

SIMPLIFY CIRCUIT PROTECTION AND POWER DISTRIBUTION WHEN DESIGNING ELECTRICAL SYSTEMS

Retrieved from https://info.littelfuse.com/hubfs/Commercial-Vehicle/hwb-campaign/documents/WhitePaper_HWB_083116.pdf

Recently, a number of manufacturers have developed smaller PDMs intended to bridge the gap between inline fuse holders and isolated relays/circuit breakers and the primary PDM. These secondary PDMs are intended to consolidate the components needed for these accessory and overflow circuits in one location. This plug-in design offered work truck and other commercial vehicle component design engineers a variety of advantages, particularly in terms of ease of installation and simpler troubleshooting/maintenance. However, many of these early accessory PDM designs still left significant room for improvement, often because they are made as snap-together modules that couldn't be sealed airtight against contaminants.

To address the shortcomings of these earlier accessory/overflow PDMs, Littelfuse Commercial Vehicle Products has developed a new class of sealed compact PDMs. These new hard-wired boxes (HWB) offer design engineers a variety of improvements in dealing with electrical system design challenges.

- **A range of sizes.** Hard-wired boxes are available to accommodate from 3 (HWB6) to 30 (HWB60-AL) mini (2.8mm) plug-in circuit protection components.
- **Compact design.** Unlike earlier PDM designs that must be enclosed in a sealed box to prevent dirt or water intrusion, HWBs are small enough to be installed virtually anywhere the flow of electrical power must be protected or controlled—whether in or on a vehicle or a piece of equipment. For example, the HWB6 measures just 70.9 mm x 64.3 mm x 36.4 mm.
- **Best-in-class sealing.** All four sizes are water-proof (not just weather-proof like some competing products) to protect the components inside from corrosion due to road splash, salt spray, and dust intrusion. The HWB6, HWB12, HWB18 and HWB60-AL have Ingress Protection ratings of IP67 (total protection from dust and protected from temporary liquid immersion) and IP69K (proven to resist ingress of high temperature and pressure wash).
- **Positive-sealing latches.** Each unit except HWB18 has two AssureLatch™ yellow positive-sealing latches that open easily to remove the cover for component replacement. The latches combine with the unit's gasket to keep the cover sealed securely against water and dirt intrusion. They are designed to snap in place audibly, so personnel servicing the unit can be confident the enclosure is sealed properly.
- **Accommodation for a varied mix of circuit protection components.** The HWB6 can accommodate up to three mini (280 style) fuses or circuit breakers. The HWB12 and HWB18 can handle mini fuses, mini format circuit breakers, 4-pin single throw relays, and 5-pin double throw relays. The HWB60-AL can accept any combination of mini fuses, relays, and circuit breakers. Designers can also customize their own circuitry using direct wire-to-component connections, which are crimped to the wire harness with grommets to seal the unit.

Littelfuse offers a growing family of Hard-Wired Boxes that can accommodate up to 60 mini plug-in circuit protection components.



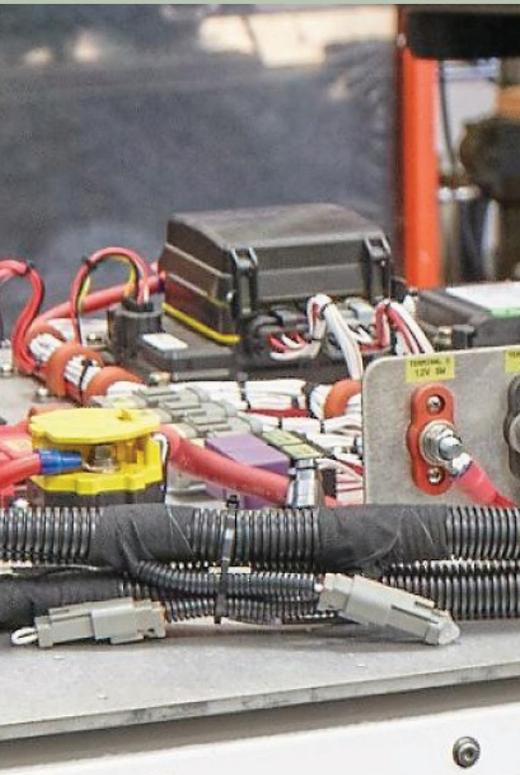
Product Series	Cavities	Capacity			Mounting Method				Relay Retention		AssureLatch	Terminal Type
		MINI Fuses	ISO Micro 280 Relay		Bracket Formed in Sheet Metal	30° Bracket	Straight Bracket	Bolt-Down	Foam	Grid		
			4-/5-Pin 35A	4-Pin 20A								
HWB6	6	3	---	---	•	•	•				•	Tyco MCP 2.8
HWB12	12	6	2	3	•	•	•		•		•	Tyco MCP 2.8
HWB18	18	9	3	3	•	•	•					Delphi Metri-Pack 280
HWB60-AL	60	30	8	12				•	•	•	•	Delphi Metri-Pack 280

See more on page 179



POWER DISTRIBUTION

Vehicle Electrical Center	174-175
MINI® Fuse PDMs	176 - 177, 179
FLEC Series PDMs	178
ATO®/ATC Fuse PDMs	179-180
Power Relay Modules	180-181
MINI®/ATM Fuse Blocks	181-182
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SEVERE SERVICE VEHICLE ELECTRICAL CENTER/ssVEC PDM

Eaton's severe service vehicle electrical center (ssVEC) features unequal power distribution in an IP66 compliant enclosure. This rugged PDM features patented Cooper Bussmann 'power grid' technology, providing efficient and compact power distribution ideal for the transportation industry including construction, agriculture, heavy trucks, marine, and specialty vehicles.

- Weathertight construction and durable plastic housing featuring multiple venting configurations
- High vibration and moisture protection allow the ssVEC to be applied in various demanding and harsh environments
- IP66 rated for high pressure spray
- Color coded connector system
- Accepts industry standard ISO 280 footprint
- Supports two M8 input power studs
- 200A maximum; 30A per output connection
- Supports a standard 12V system

Stock No. 46055

Parts Included:

- (3) 15A MINI®/ATM fuses
- (3) 20A MINI®/ATM fuses
- (3) 30A MINI®/ATM fuses
- (8) ISO 280 Micro Relays with resistors
- NO current: 35A
- NC current: 20A
- (1) Fuse puller

12V



Stock No. 46057

Parts Included:

- (16) 10A MINI®/ATM fuses
- (8) ISO 280 Ultra Micro Relays with resistors
- NO current: 20A
- NC current: 15A
- (1) Fuse puller

12V



Stock No. 46064

Parts Included:

- (12) 10A MINI®/ATM fuses
- (4) 20A MINI®/ATM fuses
- (2) ISO 280 Ultra Micro Relays with resistors
- NO current: 20A
- NC current: 15A
- (4) ISO 280 Micro Relays with resistors
- NO current: 35A
- NC current: 20A
- (1) Fuse puller

12V



POWER DISTRIBUTION

SSDVEC DUAL POWER DISTRIBUTION MODULE

Stock No. 46065

- Max Rating: 400A | 30A per output

Parts Included:

- (4) 10A MINI®/ATM fuses
- (4) 15A MINI®/ATM fuses
- (4) 20A MINI®/ATM fuses
- (4) 30A MINI®/ATM fuses
- (16) ISO 280 Micro Relay with resistor
- NO current: 35A
- NC current: 20A
- (1) Fuse puller

12V



POWER DISTRIBUTION RELAY CONNECTORS

- Power distribution modules for 2.8 mm footprint components
- Holds MINI® fuses, MINI® circuit breakers and ISO 280 micro relays



120A max

Connectors

Description	Stock No.
Black	75784
Gray	75785
Green	75786
Blue	75787
Yellow	75788
Red	75789
Orange	75790
Brown	75791



Stock No. 75786

Description	Stock No.	Notes
VEC Output Connector CPA	75795	----
TPA	75798	----
Clear Short Cover	38088	Cover only
Clear Tall Cover	38089	Fits fuses, circuit breakers and relays
Metal Side Bracket	38090	Bracket only

MULTIPLEX VEHICLE ELECTRICAL CENTER – MVEC | NEW

EATON

The mVEC is a power distribution slave module that distributes power to other devices in a vehicle, and communicates over a CAN bus. Because it is a slave module, the mVEC relies on other CAN modules to control its relays and monitor component status messages.

The mVEC is ideal for various applications including heavy truck, construction, agriculture, transit bus and coach, marine, recreational vehicle, and specialty vehicle applications. The mVEC is a cost-effective solution for power distribution systems that require the ability to monitor and control relays and fuses; and a great replacement for complex, fully electronic (solid state) power distribution modules.

Stock No. 46066

- Protected against over-voltage and reverse-voltage conditions
- Sealed to IP66
- Accepts SSC connectors
- 200A Max - 30A per output pin
- Output: 8-way power distribution connectors used with tanged terminals
 - Gray: **Stock No. 75785**
 - Black: **Stock No. 75784**

- Input: studded input supports two M8 input power studs for DC power
- 100 per input stud (M8)
- 30 per output terminals
- 100A per output connector

Parts Included:

- (8) ISO Micro Relay with resistor
- (16) 10A ATM MINI fuse
 - NO current: 35A
 - NC current: 20A
- (1) Fuse puller



12V-24V

SSC CONNECTORS | NEW

125VDC
10A

TE
connectivity



Plug Assembly
Stock No. 38293



Locking Plate
Stock No. 38294



Cable Seal
Stock No. 38297

- 20-14 gauge



Female Terminals

Wire Ga.	Gold Plated		Tin Plated	
	Loose Piece Stock No.	Reel Stock No.	Loose Piece Stock No.	Reel Stock No.
20-14	38295	38295R	38296	38296R

EATON

TAKE IT TO THE NEXT LEVEL WITH MULTIPLEX COMMUNICATION.

EATON® is taking their VEC technology to the next level with multiplexed communication on the CAN network with the mVEC.

The mVEC offers relay control with CAN messaging allowing status information like relay state, failed relay, missing component, or blown fuse to be communicated to the operator.

POWERFUL:

Patented Cooper Bussmann VEC 'power grid technology', ideal for high current circuits and Sure Power networking

RUGGED:

IP66 waterproof rating and heavy-duty housing with specialized electronics to operate in demanding applications

FLEXIBLE:

Offered in standard or customized versions



View stock at WAYTEKWIRE.COM/MVEC or call 800-328-2724 for custom product options

Stock # 46066

REAR TERMINAL MINI® FUSE AND RELAY (RTMR) PANELS |

- Weather tight enclosure with cover
- Housing is made from 94 VO thermoplastic; #10-32 input studs are made of bright nickel plated brass
- 30A max output per contact
- IP66-IEC 529 rated
- Use tangless terminals and seals from chart below and crimp with tools listed
- Standard height cover fits fuses
- Taller cover fits fuses and circuit breakers
- Relays and fuses sold separately



Housings

Stock No.	Description
46077	With standard cover
46343	5 - 280 Bussed Micro Relays with 10 Bussed Fuses, nuts assembled, with tall cover
46344	3 - 280 MINI® or 5 - 280 Micro Relays, 10 Fuses, with tall cover
46345	3 - 280 MINI® Relays or 5 - 280 Micro Relays, 10 Bussed Fuses, nuts assembled, with tall cover
46346	3 - Bussed 280 MINI® or 5 - 280 Micro Relays & 10 Fuses, nuts assembled, with tall cover
46347	3 - 280 MINI® relays & 10 MINI® fuses or MINI® circuit breakers, with tall cover



Stock No. 46344

Wire Gauge	Tin Plated Tangless Female Terminal Stock No.	Reel Stock No.*	Delphi No.	Cable Seal Stock No.	Cable Seal Color	Delphi No.	Tool Guide
22-20	30068	30068R	12110846	39004	Red	12015899 15324983**	408
18-16	30069	30069R	12110847	39000	Green	12015323 15324982**	
16-14	31068	31068R	12129409	39001	Gray	12010293 15324980**	474
14-12	31069	31069R	12110845	39002	Blue	12015193 15324981**	

* Terminals available on reels by Stock No. specified in table above.
** Replacement part for Delphi number listed above. Changed from 4% oil to 2% oil.



Short Cover w/ Vent
Stock No. 46088



Tall Cover
Stock No. 46087



Mounting Bracket
Stock No. 46085

- Order two brackets per fuse panel

Stud End Cap for Input Stud RTMR Stock No. 23519

- (Eaton's Bussmann No. B066-7008)
- Silicone Material



Cavity Plug Stock No. 39010

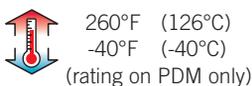
- (Delphi No. 12010300)
- Cavity plugs are required for all unused pin locations



SERIES 15310 60-POSITION RTMR RELAY & FUSE PANELS |

Stock No. 46348

- Accepts ATM/MINI® blade fuses, circuit breakers as well as other components such as relays, diodes, flashers, etc. with 2.8 mm blades on 8.1 mm centerline spacing
- Mounting #10-32
- Housing and cover black thermoplastic
- 30A max per terminal 12/24VDC



(rating on PDM only)



Wire Ga.	Tin Plated Female Terminal Stock No.	Cable Seal Stock No.
20-16	30098	39027
14-12	30099	39028

Cavity Plug	Stock No.
	39029

RFRM RELAY & FUSE PANELS |

Dual Busbars 10-32 inserts

Stock No. 46354

No Busbars

Stock No. 46357

Extra Cover

Stock No. 46359

- House up to 10 micro relays and 40 mini fuses
- Nominal 12VDC and 24VDC systems, 100A per busbar, 200A max
- IP66 (with use of cover and seal)



Wire Ga.	Terminals Stock No.	Cable Seals Stock No.
18-16 ga	30037	39000
14-12 ga	31075	39001
12-10 ga	32035	39002

POWER DISTRIBUTION MODULES



GEP Power Products offers a broad spectrum of standard and custom power distribution modules (PDMs) designed to provide a compact package, with mounting flexibility and high distribution point density. Manufactured with a rugged thermoplastic housing and silicone seal, GEP's power distribution modules are designed for use in transportation, off-road vehicle and many other harsh environment applications.

- Accepts Delphi Metri-Pack 280 tanged terminals
- Designed for higher power applications and to withstand harsh environments
- PDMs interlock to allow for component add-ons and system growth
- Accepts a combination of 2.8mm components - MINI fuses, circuit breakers and diodes



Stock No. 38533

Stock No.	Positions	Mounting with Cover	Optional TPA Stock No.
38531	48	Side	38536
38533	72	Top	38532

Stock No. 38530

- Accepts (3) Maxi ISO Relays
- Accepts Delphi Metri-Pack 630 female terminals **Stock No. 31079, 32079, 30079**
- Designed for higher power applications and to withstand harsh environments
- Top mount with sealed cover
- Optional TPAs available: **Stock No. 38534**
- PDMs interlock to allow for component add-ons and system growth



60 AMP POWER DISTRIBUTION MODULE

Stock No. 80121

- No more replacing blown fuses
- Innovative, fully user-programmable power distribution module
- Connect to auxiliary circuits, aftermarket devices and accessories like driving lights, computers and more
- IP68 rated for harsh environments



COMPACT SEALED FUSE AND RELAY HOLDERS



- Ideal solution for auxiliary and accessory "add-on" applications in harsh environments
- Accepts Delphi Metri-Pack 280 Series tanged terminals fuse/relay combinations



Circuits	Holder Stock No.	Cover Stock No.
12	38550	38551
24	38553	38554



Stock No. 38550



Stock No. 38551

TPAs

- TPAs hold the terminals firmly in the connector bodies and act as strain reliefs

Positions	Stock No.
12 & 24	38552



Stock No. 38552

Mounting Brackets

- Stainless steel design



Stock No.	Type
38537	Flat Anti-Rotation Mounting Bracket
38538	Flat Mounting Bracket without Anti-Rotation Tab
38539	90° Degree Mounting Bracket

Cavity Plug

Stock No. 38535

- Optional plug for all pin locations not filled with terminals for **Stock No. 38530, 38531 & 38533**



2-POSITION MINI FUSE HOLDER ASSEMBLY



Compact, IP67 rated, two position mini fuse holder accepts AMP MCP (Multiple Contact Point) 2.8 contacts. This sealed mini fuse holder is engineered for reliability in applications where failure is not an option.

- Uses high performance AMP MCP terminal system for proven reliability
- Sealed housing can hold 2 active mini fuses + 2 spare fuses
- Environmentally sealed IP67 rating



Stock No. 45680



Stock No. 45681



Stock No. 45682

Stock No.	Components
45680	Sealed Mini Fuse Holder Assembly
45681	Cover
45682	Sealed Mini Fuse Holder Assembly with Mounting Clip

Customizable Power Distribution

The Perfect Fit For Your Application

Available Summer 2019



HWB6



HWB12



HWB18



HWB60



POWER DISTRIBUTION

FLEC SERIES CONFIGURABLE POWER DISTRIBUTION MODULE |

The Flexible Electrical Center (FLEC) is a configurable power distribution module suitable for handling the many electrical circuits found on heavy-duty commercial vehicles. The FLEC accommodates circuit protection components in a compact footprint and can be programmed to your application to create a "plug-and-play" system.

Features and Benefits

- Multi-layer PC-Board allows for custom circuit configurations
- Twist-on tethered cover enables easy single-hand installation & removal
- Sealed cover, base and connectors have an IP67 ingress protection rating which helps keep out contamination
- Base includes a vent for pressure equalization

Empty Case

Stock No. 45631



Pre-Populated

Stock No. 45630

- (22) 2.8 mm mini blade fuses rated for 30A fuse
- (6) 1.5 mm mini blade fuses rated for 15A fuse
- (18) ISO 280 Micro relays

Connectors:

- (3) Heavy-duty M8 or 3/8" studs rated up to 100A each
- (1) 8-way sealed Delphi 280 series **Stock No. 38382**
- (1) 14-way sealed Delphi 280 series **Stock No. 38391**
- (1) 16-way sealed Delphi 280 series **Stock No. 38388**
- (1) 10-way sealed Delphi 150 series **Stock No. 38333**
- (1) 12-way sealed Delphi 150 series **Stock No. 38335**
- (1) 16-way sealed Delphi 150 series **Stock No. 38337**
- (4) spare fuses located in cover

- Fuse puller held in cover
- Cover tether optional
- Stud caps optional
- Inside cover label optional



300 A
maxload

12V
or 24V

LITTELFUSE® HARD-WIRED POWER DISTRIBUTION MODULES | NEW

Every year, electrification requirement for commercial vehicles keep increasing and growing more complex, with many designs outgrowing their primary PDMs. To bridge the gap between these PDMs and inline fuse holders, Littelfuse developed the hard-wired box series as a compact solution. Designed to accommodate various accessories for overflow circuits. Hard-wired boxes for simplified designs and consolidated wiring.

- **A range of sizes.** Hard-wired boxes are available to accommodate from 3 (HWB6) to 30 (HWB60-AL) mini (2.8 mm) plug-in circuit protection components.
- **Compact design.** Unlike earlier PDM designs that must be enclosed in a sealed box to prevent dirt or water intrusion, HWBs are small enough to be installed virtually anywhere the flow of electrical power must be protected or controlled – whether in or on a vehicle or a piece of equipment. For example, the HWB6 measures just 70.9 mm x 64.3 mm x 36.4 mm.
- **Best-in-class sealing.** All five sizes are water-proof (not just weather-proof like some competing products) to protect the components inside from corrosion due to road splash, salt spray, and dust intrusion. The HWB6, HWB12, HWB18 and HWB60-AL have ingress protection ratings of IP67 (total protection from dust and

protected from temporary liquid immersion) and IP69K (proven to resist ingress of high temperature and pressure wash).

- **Positive-sealing latches.** Each unit (except HWB18) has two AssureLatch™ yellow positive-sealing latches that open easily to remove the cover for component replacement.
- **Accommodation for a varied mix of circuit protection components.** The HWB6 can accommodate up to three mini (280 style) fuses or circuit breakers. The HWB12 and HWB18 can handle mini fuses, mini circuit breakers, 4-pin single throw relays, and 5-pin double throw relays. The HWB60-AL can accept any combination of mini fuses, relays, and circuit breakers. Optional tethers keep the box's cover tied to the box itself, so it's immediately at hand once maintenance is complete, saving time and the cost of future replacement.

6-Way Mini® Power Distribution Center



Stock No. 45985

Stock No.	Cover	Notes
45985	Clear	with TPAs and bracket
45978	Black	with TPAs and bracket

10-Way ATO® Style Mini® Power Distribution Center



Stock No.	Description
45981	10-Way body
38291	18-14 ga power timer terminal
38291R	18-14 ga power timer terminal (on reel)
38292	18-14 ga yellow cable seal

12-Way Mini® Power Distribution Center



Stock No. 45984

Stock No.	Cover	Notes
45979	Clear	with TPAs and bracket
45984	Black	with TPAs and bracket

18-Way Mini® Power Distribution Center



Stock No.	Component
45995	Base
45994	Cover
45996	Rubber Seal
45997	6 Contact TPA*
45998	Metal Bracket
45982	Black cover with TPAs and Metal Bracket
45983	Black cover with TPAs

* must buy quantity of 3 for 18-Way

60-Way Mini® Power Distribution Center



Stock No.	Component
45990	Base
45991	Cover
45992	Gasket
45993	10 contact TPA
45989	Complete kit w/AssureLatch™
45999	Complete kit

POWER DISTRIBUTION

REAR TERMINAL ATOF®/ATC FUSE PANELS |

- Power distribution system mounts rear wiring with 20 or 24 positions
- Black thermoplastic material
- Splash resistant cover included
- Order terminals for output circuits separately

200A 257°F (125°C)
-40°F (-40°C)

Double Bus - 20 Position

Stock No. 46074

- Double stud split input power bus for 14 and 6 output circuits
- Two 1/4" stud size inputs
- Comes with short cover
- Optional tall cover **Stock No. 46086**

Triple Bus - 24 Position

Stock No. 46075

- Triple stud split input power bus for 12, 4, and 8 output circuits
- Two 1/4" stud size inputs, disconnect terminals on middle bus
- Comes with tall cover



Stock No. 46075
(Fuses sold separately)

Item Description	Stock No.	Delphi No.
Output Terminal for wire ga. 16-14	31037	12020321
Output Terminal for wire ga. 12	32036	12020400



Other sizes available on a special order basis. Call 800-328-2724 for details.



Stock No. 46074



Optional Tall Cover

Stock No. 46086

- For use with circuit breakers



Hand Tool

Stock No. 507

- Crimps terminals 31037, 32036



Removal Tool

Stock No. 424

(Delphi No. 12094430)

POWER RELAY MODULES |

Power Relay Module - Connector Output

Stock No. 46094

- Use with output connector **Stock No. 46043**
- Capable of switching and protecting high current loads
- Silicone sealed removeable cover
- 2 - J-Case style fuses (sold separately)
- Sealed 70 amp relay mates with **Stock No. 38201**
- M8 input stud

185°F (85°C)
-40°F (-40°C)

**12V
70A**



Typical Finished
Packard Metri-Pack 800
Output Connector

Packard Metri-Pack 800 Output Connector Components

- For Power Relay Module **Stock No. 46094**



Female Terminal Cable Seal TPA

Part	Stock No.	Delphi No.	Color
Female Terminal 8-10 gauge	33009	12092445	n/a
Cable Seal 8-10 gauge	39009	12129381	Red
TPA	38033	----	Black
Output Connector	46043	----	Black
Output Connector	75794	----	Gray
CPA	75796	----	Black

POWER RELAY MODULES |

Power Relay Module - Stud Output

Stock No. 46095

- 2 - M6 output studs
1-switched
1-non-switched
- Fuse position for J-Case style fuses (sold separately)
- Removable cover offers weather tight enclosure for fuse position
- Sealed 70A relay mates with **Stock No. 38201**
- M8 input stud

↑ 185°F (85°C)
↓ -40°F (-40°C)

12V
70A



Power Fuse Module - without Relay

Stock No. 46096

- 2 - M6 output studs
1-switched
1-non-switched
- Holds two J-Case cartridge style fuses – each a separate circuit (sold separately)
- Removable cover offers weather tight enclosure for fuse position
- M8 input stud

↑ 185°F (85°C)
↓ -40°F (-40°C)

12V
70A



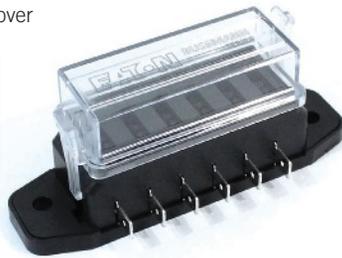
ATM FUSE BLOCKS |

- Alternative for smaller installations
- Each pole has its own line and load ¼" male quick disconnect terminal (power is not provided by a common bus)
- Clear, splash proof plastic cover

↑ 221°F (105°C)
↓ -40°F (-40°C)

32V

Poles	Stock No.	Amps
4	47055	30
6	47056	45
8	47057	60
10	47058	90



MICRO2® FUSE BLOCKS |

- Alternative for smaller installations
- ¼" male quick disconnect terminals
- Clear, plastic cover

↑ 221°F (105°C)
↓ -40°F (-40°C)

32V

Poles	Stock No.	Amps
4	47060	30
6	47061	45
8	47062	60
10	47063	90



ATOF®/ATC FUSE BLOCKS |

- Alternative for smaller installations
- ¼" male quick disconnect terminals
- Clear, plastic cover

↑ 221°F (105°C)
↓ -40°F (-40°C)

32V

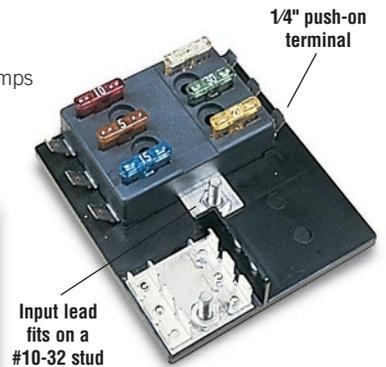
Poles	Stock No.	Amps
4	47050	30
6	47051	45
8	47052	60
10	47053	90



LIGHTWEIGHT FUSE PANELS |

- Suggested for accessory use only
- Use with standard ATOF®/ATC fuses or blade type circuit breakers
- Maximum current for all circuits is 95 amps
- Recessed fuse contacts help prevent shorting of circuits

Circuits	Without Ground Terminals Stock No.	With Ground Terminals Stock No.
6	46050	46060
8	46051	46061
10	46052	46062
12	46053	46063



Input lead fits on a #10-32 stud

With ground terminals
Fuses sold separately

STANDARD ATOF®/ATC FUSE BLOCKS WITH CLEAR COVER |

NEW

- Tin plated copper terminal connections
- Input terminal stud: M5
- Clear insulating cover design for water and dust proofing
- Mounting: Two 5 mm mounting holes for #10 screws
- 30A per circuit - 100A max current rating



Stock No. 45640

Fuses in dual rows

Standard Stock No.	w/LED Indicator Stock No.	Position	Connection
45647	45618	4	1/4" quick disconnect terminals
45648	45619	6	1/4" quick disconnect terminals
45649	45620	10	1/4" quick disconnect terminals
45643	----	4	M4 screws
45644	----	6	M4 screws
45645	----	10	M4 screws

Fuses in single row

Standard Stock No.	Position	Connection
45640	4	1/4" quick disconnect terminals
45641	6	1/4" quick disconnect terminals
45642	10	1/4" quick disconnect terminals



Stock No. 45647



Available with LED indicators.
Fuses and quick disconnects not included.

HEAVY-DUTY ATOF®/ATC FUSE BLOCKS |

- Clear, durable dust cover with fastening nut
- 1/4" push-on terminals
- Recommended for supplemental accessory power requirements

12V



Stock No.	Number of Fuses	Maximum Current (amps)
46080	4	60
46081	6	90
46082	8	120
46083	10	150
46084	12	180

COMPACT ATOF®/ATC FUSE BLOCKS |

- Base material: black nylon PA66
- 1/4" push-on terminals
- Cover material: PA12
- Order block and cover separately

MTA
Advanced Automotive Solutions

32V



Stock No. 47089

Stock No. 47090

Number of Fuses	Fuse Block Stock No.	Fuse Cover Stock No.	Maximum Load (amps)
4	47085	47086	20A/circuit, 80A Total
6	47087	47088	20A/circuit, 100A Total
8	47089	47090	20A/circuit, 135A Total

POWER DISTRIBUTION

MINI®/ATM FUSE BLOCKS |

- Space saving design
- Output: 1/4" push-on terminals
- Input terminal: #10-32 threaded studs
- Uses mini blade fuses (not included)
- Clear insulating cover design for water and dust proof

32V
30A/circuit
100A max



Stock No.	LED Stock No.	Number of Fuses
45605	45608	4
45606	45609	6
45607	45615	10



LED indicators for easy open fuse indication
Fuses and quick disconnects not included.

BLADE TYPE HOLDERS | All holders shown are for the standard ATOF®/ATC fuses.

Stock No. 47070

- Complete assembly for ATOF® or ATC type blade fuses
- Units slide together to gang for multiple combinations
- Includes 12 ga GPT wire, 8" leads
- Mounting holes for #10 screws are 3 1/8" apart
- Individual components available (see table below)

4 Gang Fuse Block



Item Description	Stock No.	Delphi No.	Recommended Delphi Tool
Body	47080	12004943	----
Terminal Busbar	32029	12004568	----
12 ga Terminal	32036	12020400	407
16-14 ga Terminal	31037	12020321	401
20-18 ga Terminal	30038	12020334	401

ST BLADE FUSE BLOCKS |

- 6 or 12 circuits and cover
- Cover satisfies ABYC/USCG requirements for insulation, push button latch providing easy access to fuses, storage for two spare fuses
- Label recesses that accept Blue Sea Systems small format labels for circuit identification
- Accepts ATO® and ATC fuses (sold separately)
- Tin-plated copper buses and fuse clips
- Maximum amperage: 100A per block, 30A per circuit

32VDC

Stock No.	Blue Sea Part No.	Description
78152	5025	6 Circuits w/ Negative Bus
78154	5028	6 Circuits
78156*	5035	6 Circuits
78153	5026	12 Circuits w/ Negative Bus
78163**	5032	12 Circuits w/ Negative Bus
78155	5029	12 Circuits

* fuse slots in single row
** fuses and negative bus are on a split bus



Stock No. 78155

SAFETYHUB FUSE BLOCKS |

- Consolidates up to seven fused circuits
- Sealed cover protects fuses from the harsh environments
- Integrated connector plugs eliminate loose wires and provide a secure, waterproof connection
- Ignition protected fusing meets Coast Guard and ABYC requirements for installation
- Fuses sold separately

32VDC



Stock No. 78158

Stock No. 78151

Stock No.	Blue Sea Part No.	Series	Circuits	Fuses	Current Rating
78158	7725	100	7	3 – MIDI®/AMI	170 amp max per circuit
				4 – ATOF®/ATC	20 amp max per circuit
78151	7748	150	10	4 – MIDI®/AMI	170 amp max per circuit
				6 – ATO®/ATC	25 amp max per circuit

ST BLADE COMPACT FUSE BLOCKS |

- Accepts ATO®/ATC fuses
- Single side design allows wire entry from one side to minimize footprint
- Meets ISO 8446 and SAE J1171 ratings for use in a gasoline engine compartment
- Tin-plated copper buses and fuse clips
- 100A per block, 30A per circuit
- #10-32 terminal stud size
- #8 mounting screw

32VDC



Stock No. 78140

Stock No.	Blue Sea Part No.	Circuits
78140	5045	4
78142	5046	8



Stock No. 78142

DC POWER DISTRIBUTION PANELS |

- Will withstand: salt spray, rain, hose washdowns, momentary immersions
- ON-OFF contura switches
- ON indicating LEDs embedded in switches
- Each switch is fused with 15 amp AGC fuse
- 12V or 24V DC nominal Voltage
- 45A cumulative panel rating

12VDC 20A

24VDC 15A



Stock No. 78101

- 3.75" H x 5.25" W x 3.00" D



Stock No. 78100

- 7.50" H x 5.25" W x 3.00" D

Stock No.	Blue Sea Part No.	Description
78101	8262	4 Position
78100	8053	6 Position

Basic DC Panel Label Set

Stock No. 78102

(Blue Sea No. 8030)

- Labels for switch panels **Stock No. 78100 & 78101**
- 30 Labels
- 1.438" L x 0.438" H
- See waytekwire.com for label descriptions



POWER DISTRIBUTION

LTX MEGA® & MIDI® 6 POSITION FUSE BLOCK |

NEW

Littelfuse
Expertise Applied | Answers Delivered

Stock No. 45980

- All the high current fusing in one sealed location
- Bussed input to all 4 MEGA® and 2 MIDI® Fuses
- Common input reduces the number of large gauge cables that need to attach to battery
- All bolt down connections are made inside of the seals which enhances the environmental protection of the box
- Gore-Tex breather prevents temperature changes from pulling in moisture
- Max total current: 240A
- Flammability rating: UL94-V0

↑ 248°F (120°C)
↓ -40°F (-40°C)

6-32VDC



SL SERIES POWER DISTRIBUTION MODULE |

Stock No. 45975

Littelfuse
Expertise Applied | Answers Delivered

- Provides main battery shutdown from a remote location
- Four unswitched 24-hour 1A-40A ATO® fuse locations
- Ideal for low-current circuits
- Water and dust resistant
- Tin-plated copper studs
- 3 MIDI® fuse locations

12VDC
300A

↑ 221°F (105°C)
↓ -58°F (-50°C)



HPDB SERIES MEGA® POWER DISTRIBUTION MODULE |

Stock No. 46319

Littelfuse
Expertise Applied | Answers Delivered

48VDC
600A

- AssureLatch™ technology positive-sealing latches keep cover secure
- Custom insert molded studs results in high terminal torque capability
- Max current per circuit: 300A
- Separate fuse compartment provides a seal that protects the fuses
- IP67, IP69K

↑ 221°F (105°C)
↓ -58°F (-50°C)



LX SERIES ATO® & MIDI® FUSE POWER DISTRIBUTION MODULE |

Littelfuse
Expertise Applied | Answers Delivered

- Protects up to 4 high-amp and 6 low-amp circuits (30-200A MIDI® fuses and 1-40A ATO® fuses)
- Eliminates battery-box clutter, and saves space
- Reduces overall system cost by combining individual fuse holders
- Recommended ring terminal (high-amp): 5/16" (M8)
- Recommended ring terminal (low-amp): #8 (M4)
- IP59K

60VDC
MAX

↑ 257°F (125°C)
↓ -58°F (-50°C)

Amps	Stock No.
600	45976
200	45977



Stock No. 45977

MDB SERIES MIDI® POWER DISTRIBUTION MODULE |

Cole Hersee
A Littelfuse® Brand

- Internally bussed allowing for high current power distribution
- AssureLatch™ yellow positive-sealing latches keeps cover securely in place
- Innovative cable seals provide a tight seal for power cables in a variety of diameters
- Sealed to IP67 and IP69K for maximum flexibility in mounting location
- Great for construction, agricultural and high amperage vehicles

6-58VDC
200A

↑ 185°F (85°C)
↓ -40°F (-40°C)

Positions	Stock No.
2	46327
3	46328



POWER DISTRIBUTION

PDM-AMI FUSE HOLDERS

- Sealed bolt-down fuse holder
- Used for main branch primary fusing and accepts multiple (two, three or four) industry standard AMI fuses
- Using a common input busbar, requires just one input connection to power all fuses
- Provides efficient power distribution suitable for many battery box and "under the hood" applications
- IP6K9K rating, some of the highest protection from dust, water splash and pressure spray available
- Designed for high current power distribution, supports fuses up to 200A per channel
- M8 studs

Positions	Stock No.
2	46322
3	46323
4	46324



LMG SERIES BOLT-IN FUSE HOLDERS

- Used for main branch primary fusing
- Accepts multiple industry standard AMG fuses
- Using a common busbar, the LMG requires just one input connection to power all fuses
- UL rated 300A
- Maximum total combined rating is 300A continuous
- Cover and busbar included

Stock No.	Positions
46013	2
46029	3
46030	5

185°F (85°C)
 -40°F (-40°C)



LMI SERIES AMI FUSE HOLDER SYSTEM

- Efficient power distribution for under-hood applications
- Used for main branch, primary fusing
- Compact size, high amp capabilities
- Use up to 6 MIDI® or AMI fuses per assembly
- One input module and bus bar needed per complete assembly

Assembly Tips:

- Input module should be located in center of assembly
- Use higher current fuses closest to input module

185°F (85°C)
 -40°F (-40°C)

Typical Assembly:

400A max per assembly



Fuse Module

Stock No 46390

- #10-24 stainless steel studs and cover
- Cover material: red EPDM santoprene
- Module material: UL-rated 94VO thermoplastic



Input Module

Stock No 46391

- 5/16"-18 stainless steel stud and keps nut
- 1 - input module required for each assembly



Busbars

Stock No.	Number of Positions
46392	2
46393	3
46394	4
46395	5
46396	6
46397	7



BATTERY FEEDER STUDS | Cole Hersee A Littelfuse® Brand

- Conducts power through bulkheads or firewalls
- Impact-resistant plastic insulator/mounting bushing is 1¹⁷/₆₄" dia., 5/8" long
- (2) 3/8"-16 brass studs, 5/8" long

6-36V

250A



Stock No. 36662

Stock No. 36663

BATTERY JUMPER TERMINALS |

- Use with 3/8" eyelets and battery lugs
- Heavy-duty high strength glass-filled nylon bushing
- Mounts in "Double D" panel punches to prevent rotation



Stock No. 36656

Stock No. 36657

12-18VDC
350A

ELECTRICAL POWER BUSHING WEATHER PROOF |

- High current rating
- 4/0 terminal lugs
- Boot & gasket included
- Base material: glass reinforced nylon
- Base material UL Rating: 94 HB
- 1/4" max panel
- 1/2" stud

12VDC
500A



Stock No. 36664

Stock No. 36665

8 POINT POWER DISTRIBUTION POST |

- Connect several wire/cables to a central location
- 3/8" stud, (8) #8-32 connection points carry up to 20A each at 12VDC
- Mounting hole: 2.5"
- Base material: glass-filled nylon

48VDC
160A

Stock No.	Description
47225	Black Power Post
47226	Red Power Post
47227	Cover



BATTERY JUMPER TERMINALS |

6-36V



Stock No. 36660

Stock No. 36661

- Allows convenient jump starts and charging when battery is not easily accessible, or when reaching battery becomes dangerous
- Includes color coded rubber cap, solid brass studs, brass hex nuts and brass lock washers
- Contact studs are 1³/₁₆" dia., 1/8" long, and grooved to accept standard jumper cables

POWER POST 3/8"-16 STUD |

Stock No. 78243
(Blue Sea No. 2003)



- Connects high amperage cables securely
- Stud dimensions: 3/8" x 7/8" long
- Base material: reinforced thermoplastic
- Includes red power post insulator

48VDC



JUNCTION BLOCK STUDS |

- Material: glass-filled nylon
- 5/16"-18 stud

48V
250A



Stock No. 47205

Stock No. 47202

Stock No.	Description	Color
47202	1 Stud, Non-Feed Through	Red
47203	1 Stud, Non-Feed Through	Black
47204	1 Stud, Feed Through	Red
47205	1 Stud, Feed Through	Black

JUNCTION BLOCKS |

- Type: non-feed through
- Glass-reinforced nylon
- Stud size: 1/4"

48V
165A



Stock No. 47215

Stock No. 47217

JUNCTION BLOCKS |



- Glass-filled nylon construction
- Nuts and washers not provided
- 3/8"-16 stud

Maximum Temperature
220°F (105°C)

250A



Black Stock No. 47211 Red Stock No. 47210

Stock No.	Description	Color
47211	Non-Feed Through Junction Block	Black
47213	Non-Feed Through Junction Block	Red
47212	Feed Through Junction Block	Black
47210	Feed Through Junction Block	Red

Heavy-Duty Non-Feed through Junction Block

- High torque rating 300 in-lb max
- 1/2"-13 stud, 1.5 long

400A



Red Stock No. 47201 Black Stock No. 47200

PASS-THRU DISTRIBUTION BLOCK |



- Pass-thru Distribution Block allows one ground or power device to meet multiple ground/power requirements in both the cab and engine compartment of your vehicle
- Black or red santoprene cover (rated UL 94V-0) for protection from accidental shorts
- M6 stainless steel mounting studs

185°F (85°C)
-40°F (-40°C)



Stock No. 47231

200V



Stock No. 47230

BATTERY BUSBAR TERMINAL MOUNT |



- Tin-plated copper
- Mounting hole: 3/8" (M10) stud
- Screw terminal type: #8-32 screws with captive star lock washer

**32V
100A**



Stock No.	Blue Sea No.	Description
78248	2341	Positive Red Boot
78249	2342	Negative Black Boot

TAB TYPE TERMINAL BUSBAR |

- Accepts push-on type quick disconnect terminals
- Glass-filled nylon
- Stainless steel
- 55A @ 12VDC per tier, 20A per connection, 48VDC max voltage
- Greatly increases production speed and reduces labor cost



Stock No. 47244

Stock No. 47246

Stock No.	Contacts	Color
47243	10	Red
47244	10	Black
47246	20	Red
47248	20	Black

Covers

Stock No.	Color
47251	Black
47250	Red
47249	Yellow



TERMINAL JUNCTION BOX |



- Convenient way to connect wires between trailer and towing vehicle
- Black ABS plastic cover and base
- Connects with #10 insulated rings on page 23
- Nuts and washers not provided

Stock No.	Connections
47290	7 Way
47291	10 Way



Stock No. 47290



Stock No. 47291

TERMINAL BLOCKS | Eaton

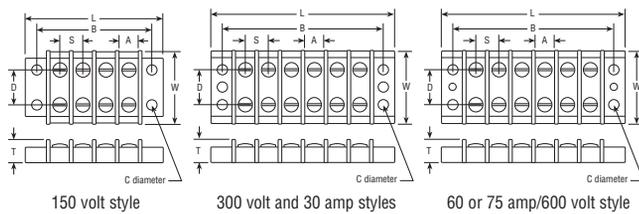
Double Row Terminal Block

- Used for general purpose electronic and electrical work
- Helps eliminate splicing
- High density circuitry can be attained to conserve panel space
- Tin plated brass terminals and zinc plated steel screws
- Molded from UL rated 94 thermoplastic
- Dimensions by circuit count

Typical 2 position
150 volt unit shown



Typical 8
position 30 amp
unit shown



Type	Positions	Stock No.	Typical Dimensions								
			L	W	T	D	S	A	B	C	
30 amp rating 150 volt max #6-32 screws 2 mounting holes	2	47102	1.40	0.88	0.41	0.31	0.38	0.30	1.12	0.17	
	3	47103	1.78	0.88	0.41	0.31	0.38	0.30	1.50	0.17	
	4	47104	2.16	0.88	0.41	0.31	0.38	0.30	1.88	0.17	
	5	47105	2.53	0.88	0.41	0.31	0.38	0.30	2.25	0.17	
	6	47106	2.90	0.88	0.41	0.31	0.38	0.30	2.62	0.17	
	8	47108	3.66	0.88	0.41	0.31	0.38	0.30	3.38	0.17	
30 amp rating 300 volt max #6-32 screws 3 mounting holes	2	47302	1.63	1.12	0.56	0.44	0.44	0.35	1.31	0.17	
	3	47303	2.07	1.12	0.56	0.44	0.44	0.35	1.75	0.17	
	4	47304	2.51	1.12	0.56	0.44	0.44	0.35	2.18	0.17	
	5	47305	2.94	1.12	0.56	0.44	0.44	0.35	2.62	0.17	
	6	47306	3.38	1.12	0.56	0.44	0.44	0.35	3.06	0.17	
	8	47308	4.25	1.12	0.56	0.44	0.44	0.35	3.93	0.17	
30 amp rating 600 volt max #8-32 screws 3 mounting holes	2	47352	2.13	1.33	0.81	0.50	0.56	0.41	1.69	0.21	
	3	47353	2.69	1.33	0.81	0.50	0.56	0.41	2.25	0.21	
	4	47354	3.25	1.33	0.81	0.50	0.56	0.41	2.81	0.21	
	5	47355	3.81	1.33	0.81	0.50	0.56	0.41	3.37	0.21	
	6	47356	4.37	1.33	0.81	0.50	0.56	0.41	3.94	0.21	
	8	47358	5.50	1.33	0.81	0.50	0.56	0.41	5.06	0.21	
75 amp UL 60 amp CSA 600 volt max #10-32 screws 3 mounting holes	2	47382	2.51	1.81	0.76	0.63	0.69	0.56	2.06	0.22	
	3	47383	3.20	1.81	0.76	0.63	0.69	0.56	2.75	0.22	
	4	47384	3.89	1.81	0.76	0.63	0.69	0.56	3.44	0.22	
	5	47385	4.58	1.81	0.76	0.63	0.69	0.56	4.13	0.22	
	6	47386	5.26	1.81	0.76	0.63	0.69	0.56	4.81	0.22	
	8	47388	6.64	1.81	0.76	0.63	0.69	0.56	6.19	0.22	

All dimensions in inches.

Terminal Block Hardware

Jumper Strip

- Used to bridge adjacent connections



Stock No. 37211 Stock No. 37214

Type	For terminal Strip series	Stock No.
Jumper	47102-47112	37211
	47302-47312	37212
	47352-47362	37214*

* Ring style not fork type.

Push-On Tabs

- Converts from screw connections



Type	For terminal Strip series	Flat tab Stock No.	45 Tab Stock No.	Tab Width
Push-on Tab	47102-47112	37220	37221	.187
	47302-47312	37250	37251	.250

All dimensions in inches.

POWER DISTRIBUTION

TERMINAL STRIPS | molex

- 12-pole
- Modular design allows larger blocks to be easily cut into smaller circuit sizes
- Contacts and screws are recessed within the housing to help prevent short circuits
- Wire protectors prevent stranded wire damage during connection
- Range of pitch spacing, wire ranges and electrical ratings provide design flexibility to choose the block that best fits the requirements



212°F (100°C) Continuous



Stock No. 47159
Space Saver

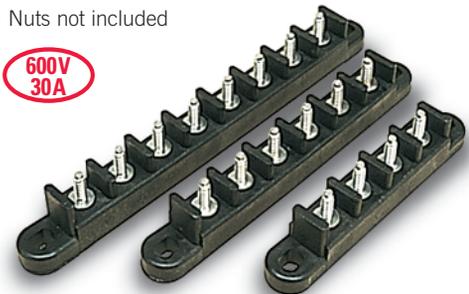
Stock No.	Wire Ga	Pitch (P)	Amps	Volts	Length	Width	Height
47159	22-12	.315 (8mm)	20	300	3.680 (93.47mm)	.72 (18.20mm)	.68 (17.30mm)
47151	18-10	.394 (10mm)	27	300	4.606 (117.00mm)	1.74 (18.80mm)	.76 (19.20mm)
47158	20-8	.472 (12mm)	40	600	5.512 (140.00mm)	1.91 (23.20mm)	.83 (21.20mm)

STUD-TYPE JUNCTION BLOCK | Eaton

- #10-24 studs spaced 3/4" apart
- Barriers prevent shorting
- Nuts not included



600V
30A



Stock No.	Studs	Overall Length	Mounting Hole Spacing
47214	4	4 1/2	3 3/4
47216	6	6	5 1/4
47218	8	7 1/2	6 3/4



TERMINAL STUD POWERBARS

NEW

- 1,000 Amp busbar for large complex wiring systems
- Tin plated pure electrical copper for maximum conductivity
- Snap on insulating cover meets ABYC and USCG requirements and includes label recess
- 16 - #8-32 screws

BLUE SEA SYSTEMS



150V

Stock No.	Blue Sea No.	Terminal Studs
78170	1990	8 - 3/8"
78171	1991	12 - 3/8"
78172	1992	8 - 5/16"
78173	1993	12 - 5/16"

HEAVY-DUTY STUD BUSBAR

- 3/8" -16 stud
- Mounting holes take 1/4" screws

Cole Hersee
A Littelfuse Brand



Stock No. 47220

Stock No.	Size	Amps
47220	2 x 3/8"	600
47221	4 x 3/8"	600
47224	4 x 5/16"	250

TERMINAL BLOCK COMMON BUSBAR SOLID BRASS

- Solid brass busbar
- Moisture resistant molded thermoplastic insulator base

Cole Hersee
A Littelfuse Brand



150A

Stock No. 47240

Stock No.	Studs	Gang
47240	8-32	10
47241	10-32	4



Stock No. 47241

BRASS BUSBAR

- Black thermoplastic insulator base
- Provide safer electrical distribution
- Allows removal of any one lead for diagnostic checks
- Base mounting holes are countersunk for #10 flathead screws
- 20 gang

Cole Hersee
A Littelfuse Brand

Stock No.	Material
47245	Solid Brass
47247	Tin-Plated Brass



36V
50A

Stock No. 47245

Stock No. 47247

DUALBUS PLUS BUSBAR

BLUE SEA SYSTEMS

Stock No. 78260

- Combines negative and positive buses on one block
- Clear polycarbonate cover snaps on to meet Coast Guard and ABYC insulation requirements
- 1/4" -20 stud
- 5 gang



300V
150A

TERMINAL BLOCK GANG BUSBAR

BLUE SEA SYSTEMS

- 300VAC or 48VDC maximum voltage
- Continuous rating of 130AAC or 150ADC
- Tin-plated copper CDA 110/UNS 11000 bus material
- 1/4" stud terminal
- #8-32 screw terminal



Stock No. 78250

Stock No.	Blue Sea No.	Gang	Cover Stock No.
78250	2301	10	78254
78251	2302	20	----
78253	2312	20 w/cover	----

150A

COMMON BUSBAR

BLUE SEA SYSTEMS

- Great for limited space applications
- Reinforced polycarbonate base
- Tin-plated copper CDA 110/UNS11000 bus material

48VDC



Stock No. 78258



Common Busbar Cover

Stock No.	Blue Sea No.	Description	Gang	Amp	Cover Stock No.
78256	2305	Mini Busbar #10-32 stud	4	100	78257
78252	2303	1/4" - 20 studs	4	150	78254
78258	2104	3/8" - 16 studs	4	600	----
78255	2304	Mini Busbar #10-32 stud	5	100	78257
78259	2107	3/8" - 16 studs	8	600	----

DUALBUS 100A BUSBAR

BLUE SEA SYSTEMS

- Combines negative and positive buses for DC Systems and neutral and ground buses for AC Systems
- #8-32 screw
- Tin-plated copper

48VDC

300VAC

100A

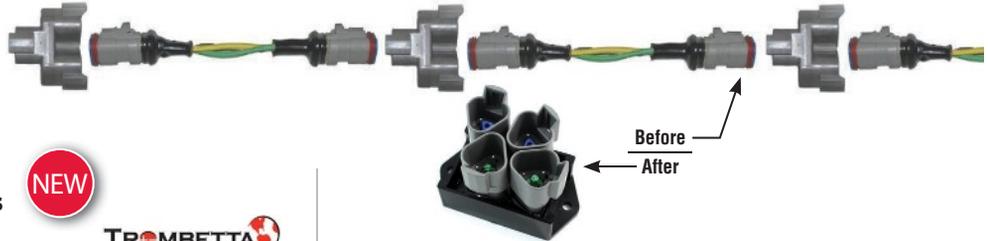


Circuits	Stock No.	Blue Sea No.	Cover Stock No.
5	78246	2701	78247
10	78244	2702	78245

POWER DISTRIBUTION

POWER SPLITTERS |

CAN bus splitters provides a cost effective and space efficient way of connecting multiple devices to the J1939 CAN bus. Modules reduces cost by limiting Y adapters and extra harnesses typically used to provide additional connections to the bus, while at the same time allowing for shorter cable runs to each device.



Splitters w/ Power and Ground Distribution Modules

NEW



- Eases troubleshooting of harnesses
- Reduces bus connections, increasing quality and durability
- Typically used for LED lighting power
- 6 x DT04-2P, 2 Pin Deutsch Connectors
Mating Connector: **Stock No. 38170** on page 52
- IP67



Stock No. 80608

Stock No.	Places	Notes
80608	5	Interconnect
80609	5	Bussed

J1939 Can Bus Control Module

NEW



- J1939 CAN bus splitters are rugged field proven with DT connectors designed to meet SAE requirements in CAN applications linking ECU's for serial data communications



Stock No. 80600

Stock No. 80603

Stock No.	Input	Output	Device Connection	Output Connector Configuration
80600	1	1	4	12-Pin Connectors
80601	1	1	5	3-Pin Connectors
80602	1	1	4	3-Pin Connectors
80603	1	1	8	(2) 12-Pin Connectors
80604	1	1	2	3-Pin Connectors
80605	1	1	2	3-Pin Connectors w/ Gold Pin
80606	1	1	4	12-Pin Connectors
80610	1	1	3	3-Pin Connectors

POWER DISTRIBUTION

Power Splitter and Power Distribution Devices

NEW



- Provides improved connection quality with no splices, welds, or soldered joints
- Mating Connector: **Stock No. 38430** or **38180**
- Contact: **Stock No. 31115** or **31109**
- Wedglock: **Stock No. 38444** or **38192**
- Operating Voltage Range: 36VDC Max
- Power stud size: 3/8"-16
- Ground stud size: 5/16"-18



Stock No. 44415

Stock No.	Amps	Notes
44414	50	Take the power and ground cable and split it out to 1 - (12) pin Deutsch Connector for fast power and ground distribution
44415	100	Take the power and ground cable and split it out to 2 - (12) pin Deutsch Connector for fast power and ground distribution

LED Dimmer Module

NEW



A simple and cost-efficient way to get different light levels into your vehicles LED lighting systems. This 6A LED Dimmer Module has four levels of dimming available.

Stock No. 80607



- Potted for a true IP67 rating
- 1 x DT04-6P, 6 Pin Deutsch Connector:
Mating Connector: **Stock No. 38176**
Mate contact: Size 16
Mate Wedge Lock: **Stock No. 38188**



CIRCUIT BREAKERS

Short Stop	192-193
Panel Mount	193-195
Snap-In Mount	194
Hi-Amp	195-196
Mid-Range	197
Marine Rated	197
ATM Fuse Style	197
ATC Fuse Style	198
Low Profile ATC Style	198
MAXI® Blade Mount	198



SHORT STOP CIRCUIT BREAKERS



Non-cycling Type II

- For applications where the unit resets only when the power is removed
- Kep nuts included



Non-Cycling Type II Breakers	
Amps	Stock No.
6	46806
8	46808
10	46810
15	46815
20	46820
25	46825
30	46830
40	46840
50	46850



Standard Automotive Type I

- Automatic reset circuit breakers for many 12VDC applications are available in your choice of metal or plastic housings
- 10-32 stud terminals
- IP66 rated (plastic only)



Metal Housings



Standard Automotive Type I Breaker – Metal Housings			
Amps	No Bracket Stock No.	In-line Bracket Stock No.	Right angle Bracket Stock No.
10	46410	46510	46310
15	46415	46515	46315
20	46420	46520	46320
25	46425	46525	46325
30	46430	46530	46330
40	46440	46540	46340
50	46450	46550	46350

Manual Reset Type III

- For applications where the breaker has to be manually reset with the push of a button
- Plastic housing
- 10-32 stud terminals



Manual Reset Type III Breakers	
Amps	Stock No.
10	46375
15	46370
20	46371
30	46373
40	46376
50	46374



Plastic Housings



Standard Automotive Type I Breaker – Plastic Housings			
Amps	No Bracket Stock No.	In-line Bracket Stock No.	Right angle Bracket Stock No.
10	46411	46511	46311
15	46416	46516	46316
20	46421	46521	46321
25	46426	46526	46326
30	46431	46531	46331
40	46441	46541	46341
50	46451	46551	46351

Circuit Breaker Boot

Red Boot Stock No. 23540

Yellow Boot Stock No. 23541

- Insulates your circuit breakers to avoid shorting out
- Red is typically used for power leads, while yellow is for marine applications
- Fits breakers with or without mounting brackets



Circuit Breaker Brackets

- Breakers snap in place
- Use with metal circuit breakers without brackets



Six gang shown

Circuit Breaker Bracket	
Gangs	Stock No.
2	46462
3	46463
4	46464
6	46466
8	46468

Circuit Breaker Busbars

- Busbar assemblies for circuit breakers
- Gang the breaker for your particular circuit application
- Brass tin plated



Four gang shown

Circuit Breaker Busbar	
Gangs	Stock No.
2	46562
3	46563
4	46564
6	46566
8	46568



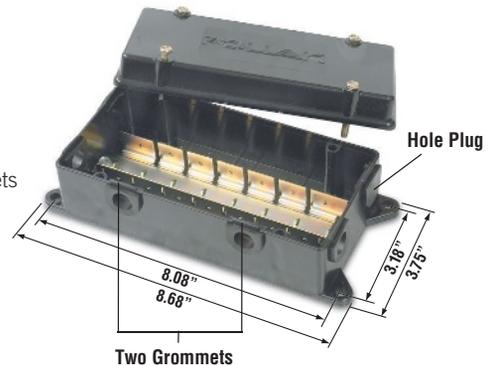
7-Breaker Junction Box

Stock No. 46560

- Works with standard Type I and Type II metal circuit breakers without brackets
- Height: 2.55"

Includes:

- 4 hex screws
- 4 hole plugs
- 14 keps nuts
- 2 wire grommets



SERIES 16 PANEL MOUNT CIRCUIT BREAKERS |



- Push to reset
- Body material: UL rated 94 V-0 thermoset plastic housing
- Single pole thermal type breakers
- Ignition proof
- UL 1510 ignition protected
- IP67

50V



Stock No. 46895



Clear Silicone Rubber Boot
Stock No. 46909

- Size 7/16"-28

Stock No.	Amp	Contact Size	Mechanical Products Part No.
Tab Mount Termination			
46895	5	1/4"	1600-037-050-15
46896	10	1/4"	1600-037-100-15
46897	15	1/4"	1600-037-150-15
46898	20	1/4"	1600-037-200-15
46899	25	1/4"	1600-037-250-15
46900	30	1/4"	1600-037-300-15
Screw Mount Termination			
46901	40	#10-32	1648-009-040-15
46902	50	#10-32	1648-009-050-15
46903	60	#10-32	1648-009-060-15
46904	70	#10-32	1648-009-070-15

MARINE GRADE SHORT STOP CIRCUIT BREAKERS |



- IP64 water resistant boot protects against dust and splashing water
- Designed with corrosion resistant materials to withstand harsh environments
- Meets ISO 8846 Marine, SAE J1171 & SAE J553 Specifications
- Terminal Stud: #10-32



Stock No. 78501

Amps	Stock No.
10	78501
15	78502
20	78503
25	78504
30	78505
40	78506
50	78507

28VDC

PANEL MOUNT CIRCUIT BREAKERS |

- Push to reset
- Type III circuit breaker
- Interrupt capacity: - 1000A @ 125VAC
- Reset time: within 60 seconds
- Meets SAE J1171 & UL1500

57 Series Low Profile

- 1/4" quick connect tabs

Amps	Stock No.
10	46496
15	46497
20	46498
30	46499

125-250VAC
32VDC



Stock No. 46498

58 Series Standard Profile

- #10 screw stud

Amps	Stock No.
30	46501
40	46502
50	46503

125-250VAC
50VDC



Clear M11 Boot For 57 & 58 Series
Stock No. 46504

CARLING TECHNOLOGIES A-SERIES CIRCUIT BREAKERS |



- Compact, temperature stable and designed for precision operation
- Hydraulic magnetic circuit breaker
- UL listed 1500, 1077

277VAC
80VDC



Stock No. 48800

Stock No.	Amp	Description
48800	10	8/32 screw terminal, white toggle with 6/32 threaded inserts
48810	15	10/32 screw terminal, black toggle with 6/32 threaded inserts
48825	20	8/32 screw terminal, white toggle with 6/32 threaded inserts

CLB CIRCUIT BREAKER BLOCKS |



- Works with 16 Series panel mount circuit breaker
- Tin-plated copper busses and screw terminals
- Clear insulating cover with square format label recesses, satisfies ABYC/USCG insulation requirements
- Maximum 32A per circuit, and 40A per jumped circuit group
- Works with Stock No. 46895 - 46900 on pg. 193

32VDC



Stock No.	Blue Sea Part No.	Description
78301	5050	6 Position
78302	5051	12 Position
78303	5052	6 Position with Ground
78304	5054	12 Position with Ground



Stock No. 78301

ST CLB Circuit Breaker Block Jumper

Stock No. 78300

(Blue Sea No. 5049)

- For use with Stock No. 78301, 78302, 78303 and 78304



CIRCUIT BREAKERS

Waterproof | Weather Proof

IP67 & 69K

10 to 300 Amp



Series 19
 With lighted TripID
 IP69K



Series 17
 Side by Side
 Stainless Steel Studs



Series 17
 New Recessed
 Push to Trip button



Series 18
 Now Available
 up to 70 Amps



Made in the USA | Shorter Lead Times | No Tariffs

SNAP-IN THERMAL CIRCUIT BREAKERS



The Series 24 Thermal Circuit Breaker is used primarily in applications that require an “on/off” circuit breaker switch capability and circuit protection in small enclosures. It is economically designed to provide superior performance at a competitive cost. The snap-in mount Series 24 may be specified as a circuit protector and/or switch, as a one or two pole device with splash and actuator guard options.

- UL 1077 recognized & UL 1500 Ignition Protected
- Economically designed with superior performance
- Snap-in mount .85" x 1.99" panel cut out

Switchable Circuit Breakers



Stock No. 46432



Stock No. 46400

Stock No.	Amp	Poles	Mechanical Products Part No.
46398	5	1	2410-100-159-0500
46399	10	1	2410-100-159-1000
46400*	15	1	2410-400-159-1500
46432	20	2	2420-100-159-2000
46434	30	2	2420-400-159-3000

* Comes with clear cover

Lighted Thermal Circuit Breakers



Stock No. 46435



Stock No. 46442



Stock No. 46490

Stock No.	Amp	Color	Mechanical Products Part No.
46435	5	Green	2420-302-111-0500
46436	10	Green	2420-302-111-1000
46437	15	Green	2420-302-111-1500
46438	20	Green	2420-302-111-2000
46439	30	Green	2420-302-111-3000
46442	5	Red	2420-302-121-0500
46443	10	Red	2420-302-121-1000
46444	15	Red	2420-302-121-1500
46445	20	Red	2420-302-121-2000
46446	30	Red	2420-302-121-3000
46490	5	Amber	2420-302-131-0500
46491	10	Amber	2420-302-131-1000
46492	15	Amber	2420-302-131-1500
46493	20	Amber	2420-302-131-2000
46494	30	Amber	2420-302-131-3000

CIRCUIT BREAKERS

IGNITION PROOF PANEL MOUNT CIRCUIT BREAKERS

- Weatherproof and ignition proof characteristics are especially well suited to application in marine, heavy equipment, trucks, buses and battery chargers
- Push-to-reset actuator is trip-free, ensuring it cannot be forced to continuously maintain closed circuit if an overload condition exists
- American Boat and Yacht Council (ABYC) rated



Stock No. 46456

32V

SAE J1428

SAE J553

Stock No.	Amp	Mechanical Products Part No.
46458	10	1800-E1-1-2E-0100-12
46457	15	1800-E1-1-2E-0150-12
46452	20	1800-E1-1-2E-0200-12
46453	30	1800-E1-1-2E-0300-12
46454	40	1800-E1-1-2E-0400-12
46455	50	1810-E1-3T-0500-13
46456	60	1810-E1-3T-0600-13

MECHANICAL PRODUCTS SERIES 17 CIRCUIT BREAKERS

- Heavy-duty design; conforms to Mil-STD-202 for corrosion, humidity and shock protection, Mil-STD-204 for vibration protection
- Easy access terminations for surface and panel mount
- Studs are diagonally or side by side positioned
- ABYC-E11 compliant
- IP67 dust and waterproof rated

Surface Mount Diagonally Positioned Termination

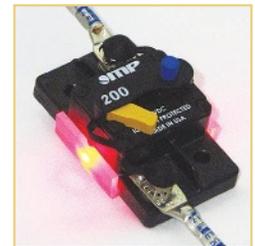
Amps	Manual Reset Stock No. 1/4" Studs	Manual Reset Stock No. 3/8" Studs	Automatic Reset Stock No. 1/4" Studs	Automatic Reset Stock No. 3/8" Studs	Push to Trip Reset Stock No. 1/4" Studs	Push to Trip Reset Stock No. 3/8" Studs
48 Volts						
50	----	----	----	----	48880	48900
60	48961	48981	----	----	48881	48901
80	48963	48983	----	----	48883	48903
100	48965	48985	----	----	48885	48905
120	48966	48986	----	----	48886	48906
150	48967	48987	----	----	48887	48907
30 Volts						
60	----	----	48921	48941	----	----
80	----	----	48923	48943	----	----
100	----	----	48925	48945	----	----
120	----	----	48926	48946	----	----
150	----	----	48927	48947	----	----
175	48968	48988	48928	48948	48888	48908
200	48969	48989	48929	48949	48889	48909
14 Volts						
225	----	49081	----	49031	----	----
250	----	49082	----	49032	----	----
275	----	----	----	49033	----	----
300	----	----	----	49034	----	----

Surface Mount Side by Side Positioned Termination

Amps	Manual Reset Stock No. 1/4" Studs	Manual Reset Stock No. 3/8" Studs	Automatic Reset Stock No. 1/4" Studs	Automatic Reset Stock No. 3/8" Studs	Push to Trip Reset Stock No. 1/4" Studs	Push to Trip Reset Stock No. 3/8" Studs
48 Volts						
50	----	----	----	----	48890	48910
60	----	48991	----	----	48891	48911
80	48973	48993	----	----	48893	48913
100	48975	48995	----	----	48895	48915
120	----	48996	----	----	48896	48916
30 Volts						
60	----	----	48931	48951	----	----
80	----	----	48933	48953	----	----
100	----	----	48935	48955	----	----
120	----	----	48936	48956	----	----
150	48977	48997	48937	48957	48897	48917
175	48978	48998	48938	48958	48898	48918
200	48979	48999	48939	48959	48899	48919



Diagonally Positioned



Mechanical Products Series 17 LED Lighted tripID™

Stock No. 46912



- Visual aid in finding open circuit breaker
- Quick visual tripID™ via red LED of open circuit
- No additional wiring or tools needed
- Can be installed on many hi-amp circuit breakers (non-MP) in the field
- Can be used in harsh applications



Side by Side Positioned

HI-AMP CIRCUIT BREAKERS



- Available in surface mount or panel mount design
- Surface mount design comes in four styles: automatic reset, manual reset, Series 185 and Series 285 switchable with a manual trip feature
- Series 185 switchable and manual reset styles feature a black reset lever for indication of a tripped condition
- Series 285 switchable style features a unique yellow lever for easier indication of a tripped circuit
- Plastic housing is approved for engine compartments or marine bilge area applications

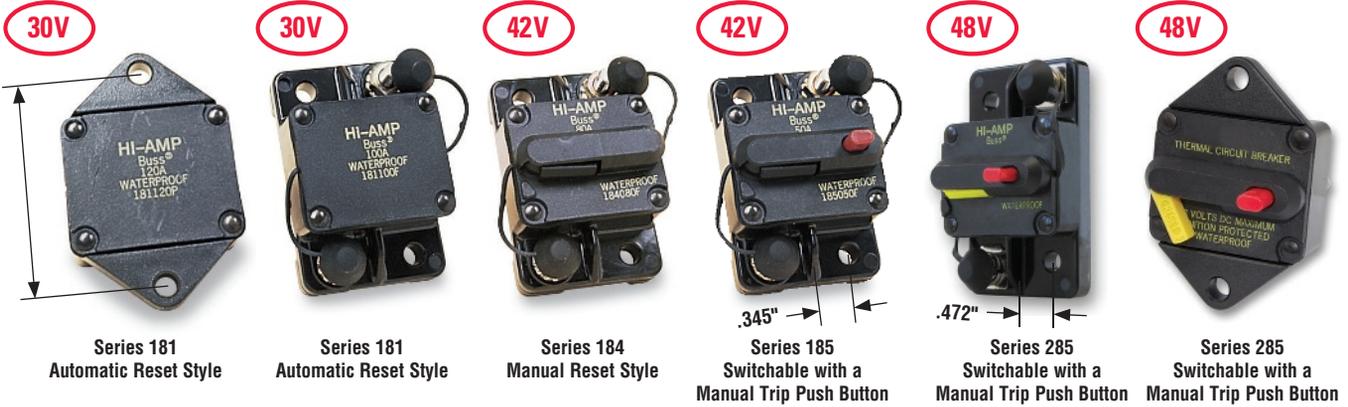
- Typically used for auxiliary and accessory circuits on trucks, buses, recreational vehicles, marine, and construction equipment
- ¼"-28 studs and surface mount style have rubber boots for insulating the ends
- Series 285 switchable style stud placement increases between stud and breaker body for easier terminal installation



Panel Mount

Surface Mount

Panel Mount



Amps	Automatic Reset Stock No.
	Bussmann Series 181
50	46910
60	46911
80	46913
100	46915
120	46917
150	46919



Flange Panel Mount Gasket
Stock No. 23539



Amps	Automatic Reset Stock No.	Manual Reset Stock No.	Switchable Manual Trip Push Button Stock No.	
	Bussmann Series 181	Bussmann Series 184	Bussmann Series 185	Bussmann Series 285
25	----	46905	46960	----
30	----	46906	46961	----
35	----	46907	46962	----
40	----	46908	46963	----
50	46930	46920	46980	46689
60	46931	46921	46981	46690
70	----	46918	46979	----
80	46933	46923	46983	46691
100	46935	46925	46985	46692
120	46937	46927	46987	46693
150	46939	46929	46989	46694

Amps	Switchable Manual Trip Push Button Stock No.
	Bussmann Series 285
50	46940
60	46941
80	46942
100	46943
120	46944
150	46945

CIRCUIT BREAKERS

MECHANICAL PRODUCTS SERIES 19 CIRCUIT BREAKERS

- Can be used in harsh applications
- Superior moisture sealing for use in harsh water environments
- Quick panel mount installation
- Robust high temperature thermoplastic case
- ¼ - 28 plated brass terminal studs with stainless steel sems nuts
- UL Recognized - UL 1077
- IP67 - water immersion up to 1m
- IP69K - high temperature water pressure



Amps	Type I Auto Reset	Type I Auto Reset w/ Red Trip ID LED	Type III Manual Reset	Type III Manual Reset w/ Red Trip ID LED
50	48879	48870	48861	48851
60	48878	48869	48860	48850
70	48877	48868	48859	48849
80	48876	48867	48858	48848
90	----	----	48857	48847
105	48875	48866	48856	48846
120	48874	48865	48855	48845
150	48873	48864	48854	48844
175	48872	48863	48853	48843
200	48871	48862	48852	48842

Type I - rated for 30VDC
Type III - rated for 12-24VDC

30V



Type 1 Auto Reset
Stock No. 48874



Type 3 Manual Reset
Stock No. 48858



Type 1 Auto Reset w/ Red Trip ID LED
Stock No. 48865



Type 3 Manual Reset w/ Red Trip ID LED
Stock No. 48850

MID-RANGE CIRCUIT BREAKERS

- Panel mount design available in two styles: automatic reset or switchable with manual trip push button
- Manual trip feature allows opening of the circuit path without disconnection from the power source
- Single pole thermal type
- 10-32 stud nuts included
- IP66, ABYC E11



32V

Automatic Reset
Stock No. 46952

Manual Trip Push Button
Stock No. 46972



Panel Mount

Amps	Automatic Reset Stock No.	Switchable w/Manual Trip Push Button Stock No.
10	46950	46970
15	46951	46971
20	46952	46972
25	46953	46973
30	46954	46974
35	46955	46975
40	46956	46976
50	46957	46977

MARINE RATED CIRCUIT BREAKERS

- Typically used in DC power systems
- Can be used as a main On/Off switch
- External ignition protected and weatherproof
- Single pole thermal type breakers
- 5/16"-18 threaded stud nuts included



Panel Mount

Surface Mount



5/16"-18 Threaded Stud Nuts Included

Amps	Panel Mount Stock No.	Surface Mount Stock No.
30	46887	46877
40	46878	46879
50	46890	46870
60	46891	46871
70	46866	46867
80	46888	46876
100	46892	46872
120	46893	46873
150	46894	46874
200	46889	46875

IP66

ATM FUSE CIRCUIT BREAKERS

Compatible with 280 type fuse blocks using 0.32" centerline spacing

Automatic Reset Type I

- Designed to fit in place of a fuse
- Marked with capacity data

Non-cycling Type II

- Designed to fit in place of a fuse
- Marked with capacity data



Amps	Stock No.
5	46759
7.5	46760
10	46761
15	46762
20	46763
25	46764
30	46765

Amps	Stock No.
5	46859
7.5	46860
10	46861
15	46862
20	46863
25	46864
30	46865

Type III

- 280 type footprint
- Material: UL-rated 94V0 thermoplastic housing
- Marking: standard marking includes amp/voltage ratings, part number, and date code
- Termination: compatible with 280 Type fuse blocks

Amps	Stock No.	Color
5	46799	Tan
7.5	46800	Brown
10	46801	Red
15	46802	Blue
20	46803	Yellow
25	46804	White
30	46805	Green



METRI-PACK 280 STYLE 68 OHM RESISTOR

- Unique design ensures a solid electrical and mechanical connection to the internal components
- Thermoplastic housing
- Brushed aluminum cover
- 2.8 mm blades on 8.1 mm centerline spacing



12V-24V

Stock No. 46883

CIRCUIT BREAKERS

ATC Circuit Breakers

- Both types marked with capacity data
- Works with fuse panels **Stock No. 46050 - 46063**
- Works with fuse block **Stock No. 46074** and cover **Stock No. 46086**
- Not for use with fuse holders **Stock No. 46032 and 47070**



Gray plastic housing with gold cover

Automatic Reset Type I

Amps	Stock No.
10	46751
15	46752
20	46753
25	46754
30	46755



Gray plastic housing with silver cover

Manual Reset Type III

Amps	Stock No.
5	46746
7.5	46747
10	46741
15	46742
20	46743
25	46744
30	46745

ATO®/ATC Circuit Breakers

- ATO®/ATC size case
- For use with fuse holders **Stock No. 46032 and 47070**
- Works with fuse block **Stock No. 46074** and cover **Stock No. 46086**
- Not for use with fuse panels **Stock No. 46050 - 46063**



Automatic Reset Type I

Amps	Stock No.
5	46770
10	46771
15	46772
20	46773
25	46774
30	46775



Manual Reset Type III

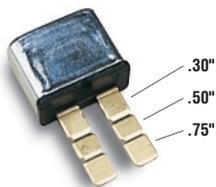
Amps	Stock No.
10	46781
15	46782
20	46783
25	46784
30	46785

UCB Circuit Breaker

Non-cycling Type II Blade Type

- Use in place of the ATO® and ATC type fuses
- Blades can be snapped off to fit three different lengths: .30", .50" or .75"
- Breakers remain open until the trouble on the line is corrected, or the power is turned off

12V



Amps	Stock No.
10	46610
15	46615
20	46620
25	46625
30	46630

Low Profile ATC Circuit Breakers

Manual Reset Type III

- Color-coded and marked to show amperage
- 5.2 mm blades compatible with ATC type fuse block

28V



Amps	Stock No.	Color
5	46791	Tan
6	46792	Green
7.5	46793	Brown
10	46794	Red
15	46795	Blue
20	46796	Yellow
25	46797	White
30	46798	Lt. Green

MAXI Circuit Breakers

- Interchangeable with MAXI® automotive fuses
- Compatible with fuse blocks accepting MAXI® fuses

24V



Automatic Reset Type I

Amps	Stock No.
20	46673
30	46675
40	46677
50	46678



Manual Reset Type III

Amps	Stock No.
20	46683
30	46685
40	46687
50	46688

MAXI Long ATC Blade Mount Type Circuit Breakers

- Standard ¼" blade matches standard ATO®/ATC fuses
- MAXI size case



Automatic Reset Type I

Amps	Stock No.
10	46642
15	46643
20	46644
25	46645
30	46646

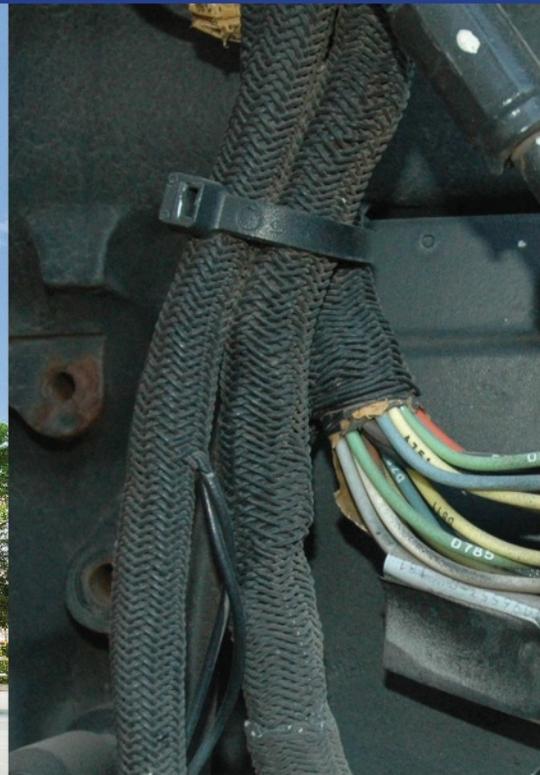


Manual Reset Type III

Amps	Stock No.
10	46652
15	46653
20	46654
25	46655
30	46656

CABLE TIES

Standard	200-202
Heavy-Duty	200-203
TY-Grip Fasteners	201
Fir Tree Push Mount Ties	203
Releasable	203
Stud Mount	203
Button Head	204
Clamp	204
Self-Cutting	204
Colored	205
Identification	205
Stainless Steel	205
Mounting Bases	206-207
Dual Loop	206-207
Cable Tie Tools	208



Thomas&Betts

HellermannTyton

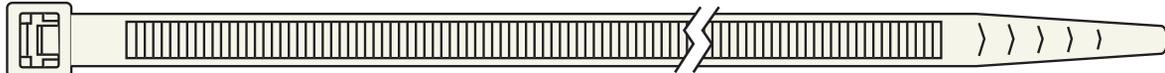
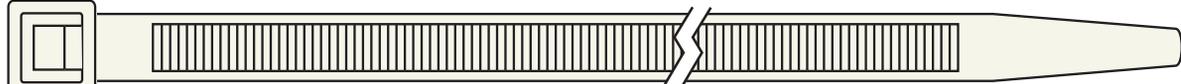
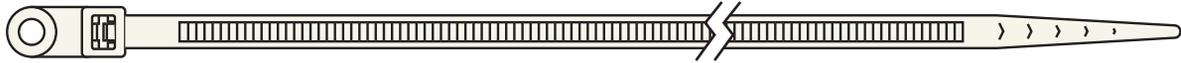
ANCOR

ALL-NYLON STANDARD AND MOUNTING TIES

- Secure hoses, wires, tubing, etc.
- Most ties meet UL requirements
- Nylon 6/6 material



Call 800-328-2724 for details.

Type	Natural Stock No.	Black Stock No.	Approx. Length	Approx. Width	Approx. Bundle Dia.		Tensile Strength	Screw Size	Standard Package Qty.
					Min.	Max			
 Standard	21021C	21041C	4	.095	.062	.75	18 lbs.		100
	21021M	21041M	4	.095	.062	.75	18 lbs.		1000
	21022C	21042C	6.1	.095	.062	1.5	18 lbs.		100
	21022M	21042M	6.1	.095	.062	1.5	18 lbs.		1000
	21018C	21019C	8.1	.095	.062	2	18 lbs.		100
	21018M	21019M	8.1	.095	.062	2	18 lbs.		1000
	21023C	21043C	5.8	.140	.062	1.25	40 lbs.		100
	21023M	21043M	5.8	.140	.062	1.25	40 lbs.		1000
	21073C	21093C	8.9	.140	.062	2	40 lbs.		100
	21073M	21093M	8.9	.140	.062	2	40 lbs.		1000
	21074C	21094C	11	.140	.062	3	40 lbs.		100
	21074M	21094M	11	.140	.062	3	40 lbs.		1000
	21075C	21095C	14.5	.140	.062	4	40 lbs.		100
	21024C	21044C	7.6	.180	.062	1.75	50 lbs.		100
	21024M	21044M	7.6	.180	.062	1.75	50 lbs.		1000
	21025C	21045C	11	.180	.062	3	50 lbs.		100
21026C	21046C	14.5	.180	.062	4	50 lbs.		100	
 Heavy-Duty	21570	21590	8.75	.300	.187	2	120 lbs.		100
	21027	21047	14.5	.300	.187	4	120 lbs.		100
	21017	21016	24.5	.302	.187	7	120 lbs.		50
	21003	21004	30	.302	.187	9	120 lbs.		50
 Extra Heavy-Duty	21976	21096	15	.350	1	4	175 lbs.		25
	21072	21092	25	.340	1	7	175 lbs.		50
	21578	21598	36	.340	1	11	175 lbs.		50
	21579	21599	48.5	.340	6	14.5	175 lbs.		50
 Standard Mounting	21030C	21050C	4.25	.100	.062	.75	18 lbs.	#4	100
	21031C	21051C	6	.138	.062	1.25	30 lbs.	#8	100
	21031M	21051M	6	.138	.062	1.25	30 lbs.	#8	1000
	21032C	21052C	8	.177	.062	1.75	50 lbs.	#10	100
	21032M	21052M	8	.180	.062	1.75	50 lbs.	#10	1000
	21033C	21053C	11	.180	.062	3	50 lbs.	#10	100
	21034C	21054C	14.5	.180	.062	4	50 lbs.	#10	100
 Heavy-Duty Mounting	21545	21555	14	.300	.187	4	120 lbs.	1/4	100

All dimensions in inches.

CABLE TIES

TY-RAP® CABLE TIES

- Stainless steel insert (with steel grip) molded in the head for an infinitely adjustable and durable tie, with no notches
- Less stress in the tie body, resulting in less chance of breakage
- Engineered for labor savings and high performance
- Standard black ties are UV resistant nylon 6/6



Type	Tie Color	Stock No. Bulk Qty. 1000	Ty-Rap No.	Stock No. Qty. 100	Ty-Rap No.	Approx. Length	Bundle Dia. Max.	Military Standard No.	Width	Tensile Strength
Standard	Natural	21621	TY23M	21721	TY523M	3.62	.625	MS3367-4	.090	18 lbs.
	Black	21641	TY23MX	21741	TY523MX	3.62	.625	MS3367-4	.090	18 lbs.
	Natural	21618	TY232M	21718	TY5232M	8.00	2.000	----	.090	18 lbs.
	Black	21619	TY232MX	21719	TY5232MX	8.00	2.000	----	.090	18 lbs.
	Natural	21616	TY234M	21716	TY5234M	14.00	4.000	----	.090	18 lbs.
	Black	21617	TY234MX	21717	TY5234MX	14.00	4.000	----	.090	18 lbs.
	Natural	21614	TY24M	21714	TY524M	5.50	1.125	MS3367-5	.140	40 lbs.
	Black	21615	TY24MX	21715	TY524MX	5.50	1.125	MS3367-5	.140	40 lbs.
	Natural	21673	TY242M	21773	TY5242M	8.19	2.000	----	.140	40 lbs.
	Black	21693	TY242MX	21793	TY5242MX	8.19	2.000	----	.140	40 lbs.
	Natural	21674	TY26M	21774	TY526M	11.10	3.000	----	.140	40 lbs.
	Black	21694	TY26MX	21794	TY526MX	11.10	3.000	----	.140	40 lbs.
	Natural	----	TY244M	21775	TY5244M	14.50	4.000	----	.140	40 lbs.
	Black	21695	TY244MX	21795	TY5244MX	14.50	4.000	----	.140	40 lbs.
	Natural	21624	TY25M	21724	TY525M	7.31	1.750	MS3367-1	.190	50 lbs.
	Black	21644	TY25MX	21744	TY525MX	7.31	1.750	MS3367-1	.190	50 lbs.
	Natural	21625	TY253M	21725	TY5253M	11.40	3.000	MS3367-7	.190	50 lbs.
	Black	21645	TY253MX	21745	TY5253MX	11.40	3.000	MS3367-7	.190	50 lbs.
	Natural	21626	TY28M	21726	TY528M	14.20	4.000	MS3367-2	.190	50 lbs.
	Black	21646	TY28MX	21746	TY528MX	14.20	4.000	MS3367-2	.190	50 lbs.

Type	Tie Color	Stock No. Bulk Qty. 500	Ty-Rap No.	Stock No. Qty. 50	Ty-Rap No.	Approx. Length	Bundle Dia. Max.	Military Standard No.	Width	Tensile Strength
Heavy-Duty	Natural	21670	TY272M-500	----	----	8.00	2.000	----	.270	120 lbs.
	Black	21690	TY272MX-500	21790	TY272MX-50	8.00	2.000	----	.270	120 lbs.
	Natural	21671	TY27M-500	21771	TY27M-50	13.40	3.500	MS3367-3	.270	120 lbs.
	Black	21691	TY27MX-500	21791	TY27MX-50	13.40	3.500	MS3367-3	.270	120 lbs.
	Natural	21627	TY275M-500	----	----	18.00	5.000	----	.270	120 lbs.
	Black	21647	TY275MX-500	21747	TY275MX-50	18.00	5.000	----	.270	120 lbs.
	Black	21651	TY29MX-500	21749	TY29MX-50	30.00	9.000	MS3367-6	.270	120 lbs.

All dimensions in inches.

TY-GRIP™ FASTENERS

- Handy, easy to use, and releaseable
- Used for temporary applications where continuous changes are anticipated



Type	Color	Stock No.	Ty-Grip No.	Approx. Length	Bundle Dia. Max.	Tensile Strength	Package Qty.
Loop Ties	Black	21430	F0200-40-0	9.0	2.0	40 lbs.	10
	Black	21436	F0350-50-0	13.0	3.5	50 lbs.	10

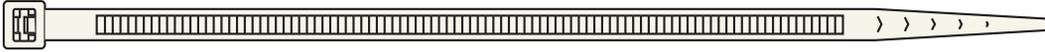
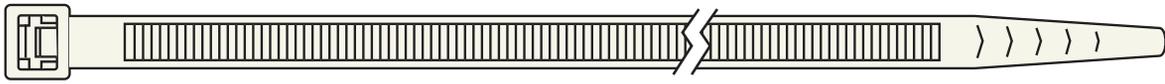
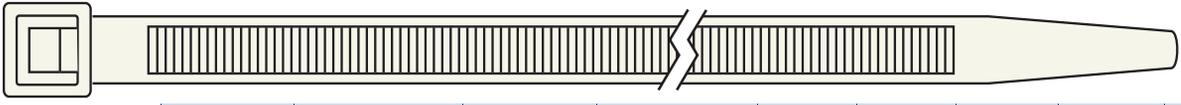
All dimensions in inches.



HellermannTyton NYLON CABLE TIES

- Bundle and secure wire and cable
- UL 94 V-2
- Nylon 6/6 material

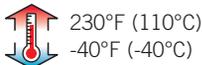


Type	Natural Stock No.	HellermannTyton Natural No.	Black Stock No.	HellermannTyton Black No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Package Quantity
 Standard 18 pound	21921	T18R9C	21941	T18ROC	4	.100	.86	18 lbs.	100
	21821	T18R9M	21841	T18ROM	4	.100	.86	18 lbs.	1000
	21922	T18I9C	21942	T18IOC	5.5	.100	1.38	18 lbs.	100
	21822	T18I9M	21842	T18IOM	5.5	.100	1.38	18 lbs.	1000
	21918	T18L9C	21919	T18LOC	8	.100	2.17	18 lbs.	100
	21818	T18L9M	21819	T18LOM	8	.100	2.17	18 lbs.	1000
30 pound	21923	T30R9C	21943	T30ROC	5.8	.140	1.38	30 lbs.	100
	21823	T30R9M	21843	T30ROM	5.8	.140	1.38	30 lbs.	1000
	21915	T30XL9C	21916	T30XLOC	14	.140	4.13	30 lbs.	100
	----	----	21816	T30XLOM	14	.140	4.13	30 lbs.	1000
40 pound	21973	T40R9C	21993	T40ROC	8.3	.160	2.16	40 lbs.	100
	21873	T40R9M	21893	T40ROM	8.3	.160	2.16	40 lbs.	1000
	21974	T40I9C	21994	T40IOC	11.6	.160	3.15	40 lbs.	100
	21874	T40I9M	21894	T40IOM	11.6	.160	3.15	40 lbs.	1000
	21975	T40L9C	21995	T40LOC	14.6	.160	4.13	40 lbs.	100
	21875	T40L9M	21895	T40LOM	14.6	.160	4.13	40 lbs.	1000
50 pound	21924	T50R9C	21944	T50ROC	8	.180	1.97	50 lbs.	100
	21926	T50L9C	21946	T50LOC	15.35	.180	4.3	50 lbs.	100
 120 pound	21970	T120S9K	21990	T120S0K	8.9	.300	2.2	120 lbs.	50
	21971	T120I9K	21991	T120I0K	11.8	.300	3.2	120 lbs.	50
	21927	T120R9K	21947	T120R0K	15.2	.300	4.1	120 lbs.	50
	21929	T120L9K	21949	T120L0K	30	.300	8.85	120 lbs.	50
 175 pound	21976	T150R9X	21996	T150R0X	15.4	.350	4.1	175 lbs.	25
	21977	T150M9X	21997	T150M0X	21	.350	5.9	175 lbs.	25
	21978	T150L9X	21998	T150L0X	32.3	.350	9.6	175 lbs.	25
	21979	T150XL9X	21999	T150XL0X	43	.350	13	175 lbs.	25

All dimensions in inches.

HellermannTyton HEAVY-DUTY HIGH IMPACT RESISTANT CABLE TIE

- Extra heavy-duty, polyamide 6.6 high impact heat stabilized resin
- High resistance against UV rays
- Rounded edges minimize stress on wire bundles



Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Package Quantity
21295	Black	T255S0HIRX2	9	.490	.5 - 2.16	250 lbs.	25

All dimensions in inches.

HellermannTyton WIDE STRAP HEAVY-DUTY CABLE TIES

- Made from high impact, heat stabilized, UV resistant nylon 6/6
- Wide strap minimizes pinching on soft bundles
- Low profile head provides compact bundling
- Thinner strap provides increased flexibility for improved ergonomics
- UL 94 HB



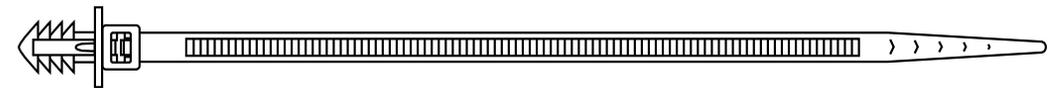
Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Package Quantity
21902	Black	111-12302	15.1	.500	4.125	120 lbs.	300

All dimensions in inches.

HellermannTyton NYLON SPECIALTY CABLE TIES

Fir Tree Push Mount Cable Ties

- Heat stabilized nylon 6/6
- Push mount end for 1/4" mounting hole
- Panel thickness .05"-.2"
- UL 94 V-2



Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Package Quantity
21286	Black	T50RTM250HSC2	8.27	.180	2.0	50 lbs.	100

All dimensions in inches.

Application

- Used on sheet metal, wood and cast iron

Push Mount Cable Ties

- Mounts into a panel or other sheet metal
- UL 94 V-2

Application

- Ideal for holding harnesses and conduit



Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Mounting Hole Dia.	Max. Panel Thickness	Package Quantity
21281	Natural	T30RSF9C2	6.23	.130	1.25	30 lbs.	.19-.22	.04-.09	100
21282	Natural	T50RSF9C2	8.3	.180	1.75	50 lbs.	.25-.28	.04-.14	100

All dimensions in inches.

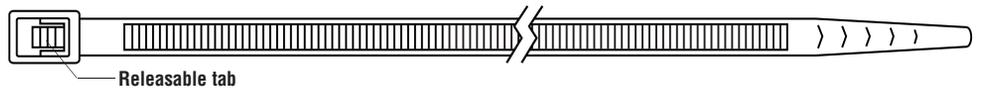


Releasable Cable Ties

- Used for repeated open and close
- UL 94 V-2

Application

- Used for prototype work where wires will be added, or when a tie is needed for a temporary application



Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Package Quantity
21275	Black	RT40ROC	8.5	.160	2	40 lbs.	100
21276	Black	RT50SOC	6.5	.180	1.38	50 lbs.	100
21278	Black	REL50LOC	9.8	.300	2.8	50 lbs.	100

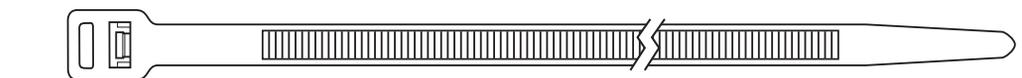
All dimensions in inches.

Heavy-Duty Cable Ties

- UV resistant nylon
- Buckle feature allows the end of the tie to be tucked away
- UL 94 V-2

Application

- Used for jobs where extra strength is required



Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Package Quantity
21080	Black	T250S0X	9.1	.490	2	250 lbs.	25
21081	Black	T250R0X	20.3	.490	4.9	250 lbs.	25
21082	Black	T250M0X	22.3	.490	5.9	250 lbs.	25
21083	Black	T250I0X	28.7	.490	8	250 lbs.	25
21084	Black	T250L0X	34.7	.490	10	250 lbs.	25
21085	Black	T250XL0X	40.6	.490	12	250 lbs.	25

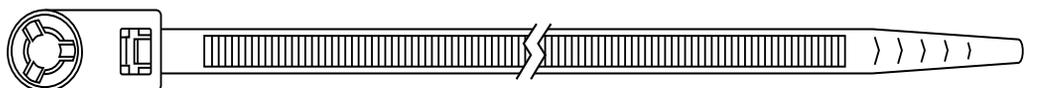
All dimensions in inches.

Stud Mount Cable Ties

- High impact UV resistant nylon
- Mounts on a 1/4"-20 threaded stud
- Simply push tie into stud for a secure grip
- UL 94 HB

Application

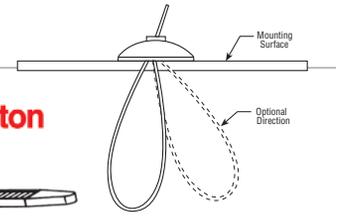
- Excellent for high vibration applications in automotive and outdoor use



Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Package Quantity
21284	Black	T120RSMOHIRK2	16	.300	4	120 lbs.	50

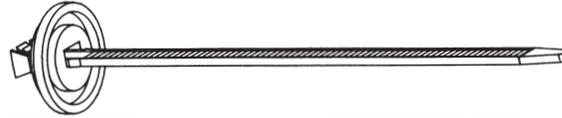
All dimensions in inches.

HellermannTyton ALL NYLON SPECIALTY CABLE TIES



Button Head Ties

- Two-piece construction designed to mount the tie on a panel or structural framework
- UL 94 HB
- High impact, heat stabilized material
- Strap can be inserted into the head in either direction to speed installation

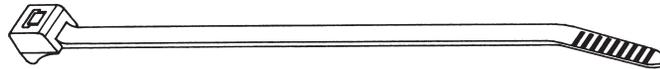


Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Standard Package
21087	Black	132-00023	9.63	.220	2.62	105 lbs.	50

All dimensions in inches.

Clamp Ties

- Polyamide 6.6 heat stabilized
- Uniquely designed heads allow for complete circular mount of 360°
- Clamps tightly on hoses and other circular parts



Nylon Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Standard Package
21267	Black	CTT20R0C3	4	.100	.50	20 lbs.	100
21268	Black	CTT60R0HSC3	8	.190	1.77	60 lbs.	100

All dimensions in inches.

Application

- Soft rubber hose

PLENUM CABLE TIES



Low Smoke and Flame Halar® Material

- Distinct red color where low smoke and flame are a concern in air handling spaces
- NEC approved for use in plenum spaces
- UL 94 V-0



Application

- Areas that require a low smoke density if burning occurs



Halar Stock No.	HellermannTyton No.	Approx. Length	Approx. Width	Bundle Dia. Max.	Approx. Tensile Strength	Standard Package
21261	T18R2HALC2	4	.100	0.87	14 lbs.	100
21262	T50R2HALC2	8	.180	1.75	40 lbs.	100

All dimensions in inches.

SELF-CUTTING CABLE TIES



Self-cutting cable ties include a small stainless steel blade that provides a quick, clean cut eliminating the need for other tools. With strong locking technology, self-cutting cable ties maintain their strength and durability even after a flush cut. Perfect for use in tight spaces, self-cutting cable ties are offered in various lengths and tensile strengths with a nylon 6/6 body.

- Integrated stainless steel blade
- Material: Nylon 6/6
- Flammability rating: V-2
- Provides a clean, flush cut
- UV Resistant UL 94



Type	Natural Stock No.	Ancor Natural No.	Black Stock No.	Ancor Black No.	Approx. Length	Approx. Width	Approx. Bundle Dia.		Tensile Strength	Standard Package Qty.
							Min.	Max.		
Standard	21155H	199267	21154H	199264	8	0.17	3/8	2	50 lbs.	500
	21157H	199268	21156H	199265	11	0.17	3/8	3	50 lbs.	500
	21159H	199269	21158H	199266	14	0.17	3/8	4	50 lbs.	500
	21155K	199275	21154K	199277	8	0.17	3/8	2	50 lbs.	50
	21157K	199279	21156K	199281	11	0.17	3/8	3	50 lbs.	50
	21159K	199283	21158K	199285	14	0.17	3/8	4	50 lbs.	50

Heavy-Duty	21161C	199321	21160C	199319	15	0.28	5/8	4	120	100
	21163X	199323	21162X	199322	17	0.28	5/8	5	120	10

All dimensions in inches.

NYLON COLORED CABLE TIES

- Variety of standard and neon colors available
- Can be used for identification and marking or to match product colors



Stock No.	Color	Length	Width	Bundle Dia.		Tensile Strength	Standard Package
				Min.	Max.		
21521	Brown	7.5	.187	.062	1.750	50 lbs.	100
21522	Red	7.5	.187	.062	1.750	50 lbs.	100
21523	Orange	7.5	.187	.062	1.750	50 lbs.	100
21524	Yellow	7.5	.187	.062	1.750	50 lbs.	100
21525	Green	7.5	.187	.062	1.750	50 lbs.	100
21526	Blue	7.5	.187	.062	1.750	50 lbs.	100
21527	Purple	7.5	.187	.062	1.750	50 lbs.	100
21528	Gray	7.5	.187	.062	1.750	50 lbs.	100
21532	Neon Pink	7.5	.187	.062	1.750	50 lbs.	100
21533	Neon Orange	7.5	.187	.062	1.750	50 lbs.	100
21534	Neon Yellow	7.5	.187	.062	1.750	50 lbs.	100
21535	Neon Green	7.5	.187	.062	1.750	50 lbs.	100

All dimensions in inches.

Colored Tie Kits

Stock No. 21529

- Contains 1000 - 7 1/2" ties
100 each of the following colors: black, brown, red, orange, yellow, green, blue, purple, gray and white

CATAMOUNT® CABLE TIE ASSORTMENT PACKAGE

Thomas & Betts

- Convenient way to store and use a variety of ties
- UL recognized and Mil-spec approved

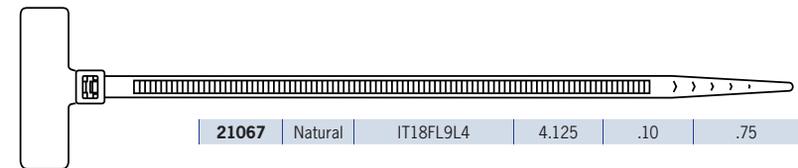
Stock No. Black	Jar contents		
	Qty.	Length	Lbs.
21453	300	4	18 lbs.
	300	7.5	30 lbs.
	50	11	50 lbs.

All dimensions in inches.



ALL NYLON IDENTIFICATION TIES

- Combines the ease of using a cable tie with the permanent identification of your product

	Stock No.	Color	HellermannTyton No.	Approx. Length	Approx. Width	Approx. Bundle Dia. Max.	Tensile Strength	Writing Area	Standard Package
	21065	Natural	IT50R9C3	8	.18	1.75	50 lbs.	1 x 7/16	100
	21068	Natural	IT50L9C3	15.25	.18	4	50 lbs.	2 1/8 x 1/2	100
	21067	Natural	IT18FL9L4	4.125	.10	.75	18 lbs.	1 3/16 x 5/16	200

All dimensions in inches.

STAINLESS STEEL TIES

- 304 stainless steel
- Locking ball design for quick installation
- Rounded edges and a smooth surface result in low insertion forces
- Non-magnetic
- UV resistant
- Fireproof

Applications

- Harsh environments



Stock No.	Approx. Length	Approx. Width	Bundle Dia. Max.	Approx. Tensile Strength	Standard Package
21400	7.9	.180	2	150 lbs.	100
21401	14.2	.180	4	150 lbs.	100
21402	20.4	.180	6	150 lbs.	100
21403	26.8	.180	8	150 lbs.	100
21404	7.9	.310	2	250 lbs.	50
21405	14.3	.310	4	250 lbs.	50
21406	20.5	.310	6	250 lbs.	50
21408	33	.310	9.8	250 lbs.	50

All dimensions in inches.

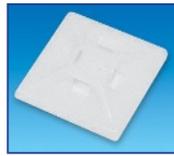


Stainless Steel Tie Gun Stock No. 423

- Ergonomically designed tool comes with foam grips
- Works with all of the stainless steel ties shown

SCREW AND ADHESIVE MOUNTBASES

- Popular method to secure wires, hoses, cables, etc.
- 4-way can be used as a 2-way
- Order cable ties separately



Typical 4-way



Typical Base style

Style	Nylon White Stock No.	Mounting Type	Screw Size	Approx. Size	Maximum Tie Width
4-way	21040	Adhesive/Screw	#6	.99 x .99 x .2	.200
	21240	Adhesive	---	3/4 x 3/4 x 3/16	.135
Base	21251	Screw	#10	5/8 x 7/8 x 3/8	.310
	21252	Screw	1/4"	5/8 x 7/8 x 3/8	.310

All dimensions in inches.

HellermannTyton

Style	Nylon White Stock No.	Nylon Black Stock No.	Mounting Type	Screw Size	Approx. Size	Maximum Tie Width
4-way	21241	21244	Adhesive/Screw	#4	3/4 x 3/4 x 5/32	.140
	21242	21245	Adhesive/Screw	#8	1 1/8 x 1 1/8 x 3/16	.180
	21243	21246	Adhesive/Screw	#8	1 1/2 x 1 1/2 x 1/4	.350

All dimensions in inches.



Stock No. 21253

- Mounts in a 1/4" hole in material up to 7/64" thick
- Accepts .190" maximum width tie



Stock No. 21254

- Fits a 1/4" diameter hole
- Features concentric circle barbs for extra holding strength
- For ties up to 3/8" wide

DUAL LOOP IMPACT RESISTANT CABLE TIES

NEW

- Mounting hole to secure bundles in heavy-duty equipment
- Heat Stabilized to provide high operating temperatures of 230°F
- Prevent downtime replacing ties from cracking and breaking from high impacts or extreme temperatures
- UL Flame Rating 94HB

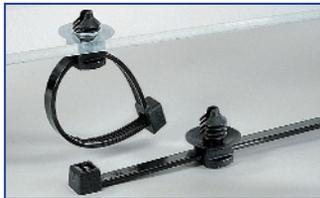


Black Stock No.	Nominal Length	Bundle Dia. Max. Ea. Side	Tensile Strength	Stud Size	Standard Package
21600	13.5	1.30	150 lbs.	0.25	50
21601	19.8	2.30	150 lbs.	0.25	50

All dimensions in inches.

HellermannTyton FIR TREE MOUNT AND CABLE TIE ASSEMBLIES

HellermannTyton



Stock No.	HellermannTyton No.	Tensile Strength	Length (L)	Max. Bundle	Mounting Hole	Panel Thickness	Mount Length (L2)	Mount Length (L3)	Mount Width (W3)	Mount Height (H2)
21371	150-77940	30 lbs.	5.8	1.38	.252-.280	.028-.193	.460	.50	.200	.295
21372	156-00157	50 lbs.	8	1.75	.252-.280	.028-.193	.460	.540	.200	.295
21373	156-00057	30 lbs.	5.8	1.38	.256-.276	.031-.276	.460	.750	.200	.500
21374	111-85871	50 lbs.	8	1.75	.256-.276	.031-.276	.460	.750	.200	.500

All dimensions in inches.

- Provides a secure grip in a mounting hole
- Protects against dirt and other impurities
- Slides along the strap of the tie for proper orientation
- Low insertion force and high extraction force
- Comes pre-assembled with black cable tie
- Polyamide 6.6 heat stabilized (PA66HS) / Polyamide 6.6 high impact modified, heat stabilized, UV resistant (PA66HIRHS)



CABLE TIES

HellermannTyton CABLE HARNESS MOUNTS

HellermannTyton

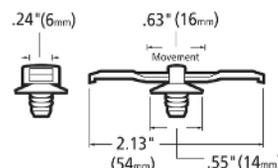


- Use either tape or cable tie to mount onto harness, then push into a hole on the panel
- .31" of movement on either side of center to allow for alignment adjustments

Fir Tree Push Mount

Stock No. 21204

(HellermannTyton No. 151-02901)



DUAL CLAMP TIES | HellermannTyton

- High impact heat stabilized nylon material
- Ensures parallel spacing between cables and hoses; keeps them from rubbing against each other and deteriorating

Application

- Used in many cars, trucks and trailers where high tensile strength and flexibility is needed



Black Stock No.	Nominal Length	Nominal Width	Bundle Dia. Max. ea. Side	Tensile Strength	Stud Size	Standard Package
21088	13	.500	1.3	150 lbs.	1/4	50
21089	19.2	.500	2.3	150 lbs.	1/4	50

All dimensions in inches.

AXIAL OVAL MOUNT | HellermannTyton

- Accepts ties from .18" to .50" wide
- Mount hole designed to fit a 5/16" bolt

Stock No. 21260
(HellermannTyton No. SAM83HIRHS1)

Application

- Stand off bundles from frame rails and cross members to prevent them from rubbing and chafing



WIRE RETAINER for Harness Boards | HellermannTyton

- Stand-off wire and cable bundles for easier cable tie applications
- Maximum bundle .83"
- 1.22" W x 2.12" H

Stock No. 21470
(HellermannTyton No. HH-20)

Application

- Harness board assemblies



CABLE TIE ANCHOR MOUNT | HellermannTyton

- 4-way entry allows cable tie to secure bundles running parallel or perpendicular
- Quick installation - secures with a single screw

Stock No. 21375



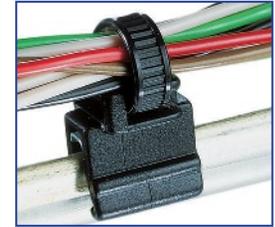
Nylon Black Stock No.	HellermannTyton No.	Mounting Type	Screw Size	Approx. Size	Maximum Tie Width
21375	CTAM20C2	Screw	#10	0.8 x 0.4 x 0.2	.200"
21376	CTAM10C2	Screw	#8	0.8 x 0.4 x 0.2	.200"

All dimensions in inches.

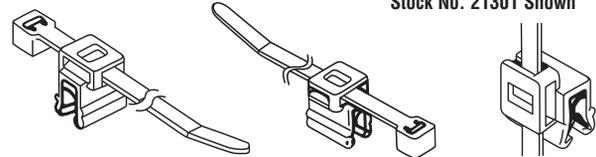
EDGE CLIPS | HellermannTyton

- Designed to route bundles by securing them to the edge of a plastic or metal sheet without the need for a mounting hole
- Easy to secure
- High extraction force due to the integrated metal clamp that holds the edge clip in place
- UV resistant, heat stabilized
- Comes pre-assembled with a 50 lb. tensile strength black cable tie

221°F (105°C)
-40°F (-40°C)



Stock No. 21301 Shown



Stock No. 21301

Stock No. 21302

Stock No. 21303

Stock No.	HellermannTyton No.	Tensile Strength	Approx. Length	Approx. Max Bundle	Approx. Panel Thickness	Description
21301	156-00539	50 lbs.	8	1.8	.039-.117	Wire bundle runs parallel to edge
21302*	156-00861	50 lbs.	7.9	1.8	.039-.117	Wire bundle runs perpendicular to edge
21303	156-00864	50 lbs.	8	1.8	.039-.117	Side mounted tie; wire bundle runs parallel

ORDERING NOTE:

* Attached cable tie is outside serrated to reduce bundle chafing.

All dimensions in inches.

CABLE TIE MOUNTS | HellermannTyton

- Heat stabilized UV resistant nylon 6/6
- Accepts all standard ties up to 1/2" wide

Application

- Small tab contained inside the mounting hole temporarily engages threads, allowing assemblers to pre-install the mount on a stud before securing with a washer and nut (not included)



Stock No. 21255

Stock No. 21287

Stock No.	HellermannTyton No.	Mounting Hole	Cable Tie
21255	HDM190HIRH4	#10	Standard Cable Ties
21256	HDM250HIRH4	1/4"	Standard Cable Ties
21257	HDM3120HIRH4	5/16"	Standard Cable Ties
21287	151-01224	3/8"	Hi-Torque Cable Ties

CABLE FASTENING SYSTEM | Thomas&Betts

- 4-way mounting system
- Mounts easily to existing studs
- Accepts ties up to .30"
- Does not work with the Super Tie

Stock No. 21295

Stock No.	Thomas & Betts No.	Stud Size
21296	XMNY-375-0-D	3/8
21297	XMNY-500-0-D	1/2
21298	XMNY-625-0-D	5/8
21299	XMNY-750-0-D	3/4



CABLE TIE TOOLS |

Thomas & Betts

Stock No. 538

(Thomas & Betts No. ERG50)

- Ergonomically designed cable tie tensioning tool reduces hand and wrist fatigue while securing and cutting your cable ties
- Weighs only 8½ ounces and has an adjustable handle span that results in less stress and strain with repeated use
- Quick tension adjustment at the front of the tool
- 360 degree head rotation eliminates using the tool in awkward positions and assures increased efficiency
- For 18-50 lb. ties, including Ty-Raps® and all nylon ties



See page 201 for Thomas & Betts cable ties.

HellermannTyton

Mark 9 Stainless Steel Tie Gun

Stock No. 423

(HellermannTyton No. MK9SST)

- Ergonomically designed tool comes with foam grips
- Works with stainless steel ties



See pages 202-203 for HellermannTyton cable ties.

HellermannTyton

Mechanical Hand Tool

Stock No. 415

(HellermannTyton No. 110-70083 EVO7)

- Tension/Lock/Cut Technology delivers a “true” flush cut for a safer installation with no protrusions to damage neighboring components
- Advanced operating system of the TLC technology provides operational reliability and durability resulting in fewer repairs and extended lifespan; eases wear and tear on tool components
- Standard grip
- Tension lock-in mechanism eliminates operator ability to change tension setting for critical applications
- Can be used to fasten all variations of HellermannTyton’s 8-50 lb. cable ties selected as suitable for any application or situation



Kit Stock No. 415K

(HellermannTyton No. 110-70106)

- Includes replacement blade and screw for nose piece

HellermannTyton

EVO®9 - Mechanical Hand Tool

Stock No. 432

(HellermannTyton No. 110-80000)

- Tensile Strength: 50-250 lbs.
- Impact-resistant housing and durable components for extended life
- Ergonomic, comfortable design
- Easy-to-adjust tension knob offers 33 different settings for precise, repeatable applications
- Precise, clean cuts
- Design requires minimal hand force to engage trigger and cut, reducing hand and wrist strain



Stock No. 410

- Easy to use economy tool for most standard size ties
- Adjustable tension and cutoff with one quick stroke
- For 18-50 lb. ties

Thomas & Betts



Stock No. 411

- Lightweight and economically priced plastic tool for tensioning and cutoff of most standard size ties
- For 18-50 lb. ties



Stock No. 412

- Heavy-duty tool for any size tie
- Especially useful on the heavy-duty and extra heavy-duty ties
- Tensions and cuts ties
- For 125-175 lb. ties

5 BENEFITS of Partnering with WHOLESALE ELECTRICAL SUPPLIERS

Wired2Serve™ Blog Article



NEVER BE WITHOUT A COMPONENT.

Working in purchasing, you need the best parts in the right quantities and you need them on time. And in turn, that makes partnering with wholesale electrical suppliers a must. Why?

COST SAVINGS

The first reason is the simplest: Going wholesale means lower prices. Wholesalers have an undeniable advantage in their ability to buy enormous lots of components, driving down the overall per unit cost for the end buyer. What's less considered, though, is how far across the board this goes, and that's what makes partnering such a great idea. You won't just save on the more exotic and expensive components, you'll be able to drive down costs across your whole system, from wires and switches to relays to circuit protection and connectors. You'll see a lower cost on fabrication, and be able to pass that onto your customers.

QUICKER TURNAROUND

Another advantage wholesalers have is turnaround. Placing large orders tends to make you a priority, and wholesalers are able to place the largest orders around. That speed in their supply chain means faster turnaround for you. And in turn, that allows you fill orders faster, assemble products faster, and speed up your business. It also means that if you need to fill a rush order, add to a regular order at the last minute, or otherwise stock quickly, you can more easily get it done and get your orders out the door.

MORE VARIETY

Another factor is that wholesale electrical suppliers often have access to components that other companies just don't. Part of this is being good customers, of course, but the constant contact with the manufacturers means that wholesalers hear about new components being built first, and have a deep sourcing network to find obscure or unusual parts you can't get anywhere else. If your wholesaler can't find your order component needs on their shelves they can quickly track down a supplier for you and fulfill your order.

FASTER SHIPPING

Wholesale electrical suppliers need a rapid shipping network, and their customers tend to benefit from that. Wholesalers are able to more quickly and effectively turn around and ship out orders, not least because the wholesale principle works with shipping as well. A busy wholesaler will simply see more visits from shipping companies and thus is better able turn around your orders. In turn, that means you can turn around your orders faster, and have happier customers.

LESS ANXIETY

The best advantage for purchasers, though, is less anxiety. Wholesalers are more stable, turn around orders faster, keep prices down, and allow you to keep any component, from the standard to the custom-built, available on your shelves. Purchasing can be a stressful, aggravating task when you work with the wrong suppliers, or with suppliers who simply can't deliver what you need in a timely manner. By partnering with a wholesale electrical supplier, you don't just secure the best for your business, you give yourself more time to deal with the other tasks on your job.

If you're looking for a great vendor, look no further than Waytek. Check out what we have to offer by viewing all wire and cable products.

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