

Why Use Such Large Cable?

Low-voltage power systems with inverters can have very high current flows in the cables that connect the inverter to the batteries. Large AC loads like microwave ovens, toasters, irons and washers can cause an inverter operating on a 12-volt battery to draw over 100 amps. Large motors may draw 300 to 500 amps at startup. Using the proper size wire between batteries, and from batteries to the inverter, will enable proper operation of the appliance. Cables that are too small will limit the current available to the inverter and may prevent a large load from operating.

Battery to Main Load Center Cables



Use these cables between a battery bank and an inverter, fuse or power center. They have flexible stranded UL Listed copper wire and 3/8" diameter lugs. Lug barrels are covered with glue-filled heat-shrink tubing. Cables are marked in red heat-shrink tubing for positive and white heat-shrink on black wire for negative.

Use cables with 1 lug to connect a Xantrex DC Disconnect to a battery or anywhere the wire will be attached to a compression connection.

Cable AWG	Length (ft.)	Color	Item code	Price
Cables with 2 Lugs				
4/0	5	Red	052-04005-R	\$59
	5	Black	052-04005-B	\$59
	10	Red	052-04010-R	\$100
	10	Black	052-04010-B	\$100
2/0	5	Red	052-02005-R	\$45
	5	Black	052-02005-B	\$45
	10	Red	052-02010-R	\$75
	10	Black	052-02010-B	\$75
2	3	Red	052-01003-R	\$22
	3	Black	052-01003-B	\$22
	5	Red	052-01005-R	\$28
	5	Black	052-01005-B	\$28
Cables with 1 Lug				
4/0	5	Red	052-04105-R	\$56
	5	Black	052-04105-B	\$56
	10	Red	052-04110-R	\$98
	10	Black	052-04110-B	\$98

Heavy Duty Battery Interconnects



Use these cables between individual battery cells or between battery banks. Circuits protected by 250-amp breakers or 400-amp fuses should use 4/0 cables. Use 2/0 cables for 175-amp breakers and 200-amp fuses. Use #2 cables for 110-amp or smaller fuses or breakers. Cables with 1 red end and 1 black end are used for series battery interconnects. Cables with white ends are for negative battery parallel jumpers.

When ordering, replace "-C" with "-R" for red, "-B" for black, "-W" for white or "-BR" for one end red and one end black.

Wire size (AWG)	Length of cable	Item code	Price
2	9"	052-05116-C	\$16.29
2	12"	052-05118-C	\$16.29
2	20"	052-05120-C	\$19.27
2/0	9"	052-05122-C	\$19.73
2/0	12"	052-05121-C	\$19.38
2/0	20"	052-05124-C	\$25.85
4/0	12"	052-05142-C	\$24.89
4/0	20"	052-05145-C	\$32.88

Light Duty Battery Interconnects



Use these cables between batteries where charge and discharge current will not exceed 50 amps. These cables are often used in golf cart and automotive applications.

Length of cable	Wire size (AWG)	Wire color	Item code	Price
9"	6	Black	052-05106-B	\$5.60
9"	6	Red	052-05106-R	\$5.60
12"	6	Black	052-05108-B	\$6.32
12"	6	Red	052-05108-R	\$6.32
24"	4	Black	052-05112-B	\$7.50
24"	4	Red	052-05112-R	\$7.50
36"	4	Black	052-05114-B	\$10.64
36"	4	Red	052-05114-R	\$10.64

Plated Copper Lugs

These UL- listed lugs are made from tin-plated copper tubing with 3/8" holes. Solder or crimp to stranded cable.

Description	Item code	Price
Copper lug 3/8" ring #6	051-03240	\$0.86
Copper lug 3/8" ring #4	051-03237	\$0.92
Copper lug 3/8" ring #2	051-03234	\$1.04
Copper lug 3/8" ring #2/0	051-03231	\$1.44
Copper lug 3/8" ring #4/0	051-03228	\$1.96



Compression Terminals

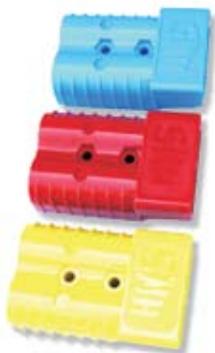
These solid brass terminals allow good connections to large gauge wire without the need of special tools or soldering. You just remove insulation from the end of the cable, insert in the terminal and tighten the nut with a wrench.

Description	Item code	Price
Compression lug #4	051-03366	\$4.95
Compression lug #1 - #2	051-03363	\$5.18
Compression lug # 1/0	051-03369	\$5.29
Compression lug # 2/0	051-03372	\$6.79
Compression lug # 4/0	051-03375	\$7.48



SB Connectors

The SB connector has been the #1 quick disconnect for over 20 years for battery powered vehicles and fork lifts. Use them to make quick disconnects on battery or inverter cables. Two connectors of the same size and color will mate. The 50 amp version is ideal for PV arrays and motors. The 175 and 350 amp units are used on battery and inverter cables. 175 amp connectors fit 1/0 wire. Contacts must be crimped or soldered. We stock the following colors in the larger versions: yellow (Y) for 12V, red (R) for 24V, blue (B) for 48V. The 50 amp connectors come with terminals for up to #6 wire and are available in gray only. Order two of the same size and color to mate.



Model	Max amps	Color	Wire size	Item code	Price
SB50A	50	grey	up to 6	051-07052	\$6.00
SB175A	175	yellow	1/0	051-07019	\$18.98
SB175A	175	red	1/0	051-07022	\$18.98
SB175A	175	blue	1/0	051-07025	\$18.98
SB350A-2	350	yellow	2/0	051-07031	\$27.00
SB350A-2	350	red	2/0	051-07034	\$27.00
SB350A-2	350	blue	2/0	051-07037	\$27.00
SB350A-4	350	yellow	4/0	051-07040	\$31.00
SB350A-4	350	red	4/0	051-07046	\$31.00
SB350A-4	350	blue	4/0	051-07049	\$31.00

Cable Crimper

Use crimper to crimp battery terminals, copper lugs and splices on wire from 8 gauge to 4/0. Adjustable crimp dies are clearly marked and easy to rotate into position. This 26" tool gives you plenty of leverage for quality crimping. Made in U.S.A. UL Listed for use with lugs at left.



Cable Cutter

Cut cable up to 6/0 AWG with this 22" long handheld or bench-mount cutter with removable carbon steel blades. Use this tool for cutting large cable to make inverter cables and battery interconnects. Made in U.S.A.



Description	Item code	Price
Cable cutter 22 inch bench mount	094-00003	\$90
Cable cutter with 22 inch handles	094-00004	\$90
Cable crimper with 26 inch handles	094-00011	\$220

Hammer Crimp Tool

This simple, inexpensive crimping tool can be used to crimp connectors on 8 through 4/0 AWG wire. Spring-loaded pin locks in "up" position for loading connector and cable. When released, the pin holds the connector securely during crimping. Use with a hammer or vice.

Description	Item code	Price
Hammer crimp tool	094-00013	\$36



Heat Shrink Tubing

Use this tubing to insulate copper lugs and compression terminals. Tubing shrinks and glue inside melts when heated with a heat gun or torch, sealing wires against corrosion and moisture. Maximum shrinkage is listed below. Sold in 6" lengths.



Description	Shrinks to	Item code	Price
Heat shrink tubing 1/2" x 6" black	3/16"	051-01132-B	\$0.96
Heat shrink tubing 1/2" x 6" red	3/16"	051-01132-R	\$0.96
Heat shrink tubing 3/4" x 6" black	1/4"	051-01135-B	\$2.00
Heat shrink tubing 3/4" x 6" red	1/4"	051-01135-R	\$2.00
Heat shrink tubing 1" x 6" black	3/8"	051-01137-B	\$3.00
Heat shrink tubing 1" x 6" red	3/8"	051-01137-R	\$3.00

Tray Cable (TC)

This 2-conductor flexible wire is excellent for outdoor applications like PV array lead-in and subarray wiring. It may be buried directly in the ground or exposed to direct sunlight. 10- and 12-gauge are good for array interconnects. UL Listed, stranded type THHN / THWN conductors. Conductor insulation is red and black.



Description	Item code	Price/foot
8 AWG 2-conductor TC cable	050-01156	\$2.16
10 AWG 2-conductor TC cable	050-01162	\$1.69
12 AWG 2-conductor TC cable	050-01174	\$0.94
16 AWG 2-conductor TC cable	050-01177	\$0.46
18 AWG 2-conductor TC cable	050-01180	\$0.35

Duplex Primary Cable

This cable has two flexible stranded conductors covered with a vinyl jacket. It is commonly used for low voltage house wiring. Since it is stranded, it can be used in boats and RVs where vibration is encountered. Conductor insulation is black and white.



Description	Item code	Price/foot
#8-2C Duplex primary	050-01544	\$1.69
#10-2C Duplex primary	050-01547	\$1.26
#12-2C Duplex primary	050-01550	\$0.83
#14-2C Duplex primary	050-01553	\$0.58

Submersible Pump Cable

10/2 without ground pump cable is for the SHURflo 9300 submersible pump. 2-conductor with ground pump cable is required for Grundfos SQFlex and SQ AC pumps.

Sensor Wire

This 3-conductor, 22-gauge direct-burial wire can be used between water level sensors and pump controls in pumping applications where you must sense the water level in a remote tank or in a well.



Description	Item code	Price/foot
10/2 without ground	050-01637	\$1.70
12/2 with ground	050-01635	\$2.40
10/2 with ground	050-01638	\$2.80
8/2 with ground	050-01643	\$3.60
Sensor wire 22/3	050-01273	\$0.30
Splice kit	075-00130	\$12.00

NEW! Direct Burial/Sunlight Resistant Cable

Type USE single-conductor copper wire for lead-in from PV arrays, wind and hydroelectric systems. It may be used for AC or DC wiring up to 600 volts. Insulation is black crosslinked polyethylene. UL Listed, USE-2 RHH / RHW-2.



USE-2 by the foot	Item code	Price/foot
#4, AWG USE-2 single conductor	050-01024	\$1.66
#6, AWG USE-2 single conductor	050-01027	\$0.90
#8, AWG USE-2 single conductor	050-01030	\$0.64
500-foot rolls	Item code	Price/roll
#10, AWG USE-2 single conductor - black	050-01141	\$250
#10, AWG USE-2 single conductor - red	050-01142	\$250
#10, AWG USE-2 single conductor - white	050-01143	\$250

NEW! PV Wire Sunlight Resistant Cable

This single conductor insulated with heat and moisture resistant, cross-linked polyethylene insulation, (Type USE-2), with an overall flame and sunlight resistant, Zero Halogen, Limited Smoke, Zero lead jacket meets the 2008 NEC code for use with transformerless inverters. UL Listed as Type PV Cable Conductors UL854 (#16 per UL 66) ICEA S-95-658/NEMA WC-70.



500-foot rolls	Item code	Price/foot
#10, AWG USE single conductor - black	050-01138	\$300

UL Listed Battery Cable

This fine-stranded, very flexible cable is UL Listed for use as battery cable. It is rated MTW or THW or AWM, 600-volt, sunlight resistant, direct burial, 105 degrees C. Available with red or black insulation.



Description	Item code	Price/foot
X-Flex battery cable 4/0 black	050-01470	\$7.75
X-Flex battery cable 4/0 red	050-01472	\$7.75
X-Flex battery cable 2/0 black	050-01476	\$5.70
X-Flex battery cable 2/0 red	050-01478	\$5.70
X-Flex battery cable 2 AWG black	050-01487	\$3.90
X-Flex battery cable 2 AWG red	050-01488	\$3.90

Meter and control wire - see pages 121 and 122

Multi-Contact Cables & Connectors

The Multi-Contact Solarline family of connectors delivers a flexible system solution for time-saving, dependable series-cabling of solar modules. All module manufacturers supply their grid-tie modules with pre-assembled output cables, tested and ready for connection. This saves considerable time during an installation and greatly increases reliability over wire junction boxes. These cable couplers are fully touch-protected and designed for up to 1000 volts and 30 amps. They are also waterproof. For parallel connection of modules in 12- to 48-volt systems, Multi-Contact makes branch connectors for use with currents up to 30 amps.

For the past few years, modules have come with Multi-Contact Solarline 1 connectors which have a soft rubber insulator. In 2007, PV manufacturers began switching to Multi-Contact Solarline 2 locking connectors to meet future electrical code requirements.

The Multi-Contact plug-and-play connector system allows for the PV arrays to be pre-assembled and pre-wired in the shop or on site. We stock both styles of connectors for use with 10 AWG or 12 AWG USE-2 stranded wire. Proper crimping to the wire and insulator assembly requires special tools. We stock standard lengths of assembled cables and adapters to go between Solarline 1 and Solarline 2 connectors and the tools required for on-site assembly of cables.

MC3 Solarline 1 Array Output Cables

These cables have the old style Multi-Contact soft rubber connectors on each end. Use these output cables between PV arrays with Multi-Contact cable outputs, and junction boxes or grid-tie inverters. They have a male connector on one end and a female connector on the other end. Use them to extend module output cables or cut anywhere along the wire to obtain the needed length of male and female cable to run from the ends of a module string to a combiner box or to an inverter. For example, if you need a 30' male and a 20' female, order a 50' cable. Made with black #10 AWG USE-2 sunlight-resistant cable.



MC Solarline 1 Male/Female Cables		
Cable length (ft)	Item code	Price
6	052-09107	\$21
15	052-09111	\$26
30	052-09115	\$34
50	052-09116	\$45
100	052-09118	\$72

MC4 Solarline 2 Array Output Cables

These cables have the newer, snap-together Multi-Contact hard plastic connectors on each end. Use these output cables between PV arrays with Multi-Contact cable outputs, and junction boxes or grid-tie inverters. They the new Solarline 2 have a male connector on one end and a female connector on the other end. Use them to extend module output cables or cut anywhere along the wire to obtain the needed length of male and female cable to run from the ends of a module string to a combiner box or to an inverter. For example, if you need a 30' male and a 20' female, order a 50' cable. Made with black #10 AWG USE-2 sunlight-resistant cable.



MC Solarline 2 Male/Female Cables		
Cable length (ft)	Item code	Price
6	052-09407	\$25
15	052-09411	\$28
30	052-09415	\$36
50	052-09416	\$47
100	052-09418	\$74

MC3 Solarline 1 Color-Coded Cables

Use these output cables between PV arrays with Multi-Contact cable outputs, and junction boxes or grid-tie inverters. White cables have an MC connector that fits the module negative output cable. Red and black cables have an MC connector that fits the module positive output cable. Made from #10 AWG USE-2 sunlight-resistant cable.



MC Solarline 1 Male/Female Cables		
Description	Item code	Price
#10 AWG white negative 100 ft.	052-09083	\$69
#10 AWG black positive 100 ft.	052-09082	\$68
#10 AWG red positive 100 ft.	052-09081	\$68

MC4 Solarline 2 PV-Wire Cables

These cables have the newer, snap-together Multi-Contact hard plastic connectors on each end and are made with PV-Wire that has an extra layer of insulation for use on ungrounded arrays in conjunction with transformerless inverters. This type of wire is required to meet the 2008 NEC if you are using a transformerless inverter.



MC Solarline 2 Male/Female PV Wire Cables		
Cable length (ft)	Item code	Price
6	052-09451	\$26
15	052-09453	\$30
30	052-09455	\$39
50	052-09457	\$52
100	052-09458	\$84

NEW! Tyco SolarLok Array Output Cables

These cables have Tyco SolarLok connectors to match the connectors on some Day4Energy, GE and CSI Solar modules. Tyco makes things complicated by selling 5 different connectors for each wire size. They make a male and female positive and a male and female negative. The negative male does not mate with the positive female. They also make a “neutral” male that will mate with positive and negative female connectors. Most modules come with a neutral male on the positive cable and a negative female on the negative cable. Using the neutral male allows series wiring of the modules. The negative female can be identified by the blue o-ring on the connector. These cables have a neutral male at one end and a negative female at the other so they can be used to extend the cables on the modules or be cut in half and used to connect to a roof-top combiner. Made with black #10 AWG USE-2 sunlight-resistant cable.



Tyco SolarLok 2 Male/Female Cables		
Length (ft)	Item code	Price
6	052-09439	\$25
15	052-09442	\$28
30	052-09442	\$36
50	052-09445	\$47
100	052-09449	\$74

MC Solarline 2 to Solarline 1 Connectors

Use these adapters to connect new-style modules to old-style Solarline 1 cables or anywhere a transition is needed between Solarline 1 and Solarline 2 cables.



Description	Item code	Price
Solarline 2 male to Solarline 1 female adapter	052-09099	\$13
Solarline 1 male to Solarline 2 female adapter	052-09098	\$13

MC Solarline 2 to Tyco SolarLok Connectors

Use these adapters to connect new-style modules to old-style Solarline 1 cables or anywhere a transition is needed between Solarline 1 and Solarline 2 cables.

Description	Item code	Price
Solarline 2 male to Tyco female neg adapter	052-09471	\$13
Tyco neutral male to Solarline 2 female adapter	052-09473	\$13

MC Solarline 1 Branch Connectors

These waterproof Y-connectors make it possible to parallel wire PV modules with Multi-Contact output cables. Maximum current allowed through connectors is 30 amps.



Description	Item code	Price
Solarline 1 branch cable coupler female - 2 male	052-09103	\$18.40
Solarline 1 branch cable coupler male - 2 female	052-09104	\$19.55

MC Solarline 2 Branch Connectors

These waterproof Y-connectors make it possible to parallel wire PV modules with Multi-Contact output cables. Maximum current allowed through connectors is 30 amps.



Description	Item code	Price
Solarline 2 branch cable coupler female - 2 male	052-09403	\$18.40
Solarline 2 branch cable coupler male - 2 female	052-09404	\$19.55

MC Solarline 1 & 2 Connectors

The connector can be assembled quickly on site by a contractor allowing custom cables to be made at the job site. A special crimping tool and wrench set are required to assemble the connector. For 10 AWG USE-2 wire. Assembly tools are on the next page.



Connector description	Item code	Price
Male Solarline 1 – fits + cables on module	099-01403	\$3.80
Female Solarline 1 – fits - cable on module	099-01401	\$3.80
Male Solarline 2 locking – fits + cables on module	099-01406	\$3.80
Female Solarline 2 locking – fits - cable on module	099-01408	\$3.80
UL label	099-01405	\$0.10

NEW! Tyco SolarLok Connectors

The connector can be assembled quickly on site by a contractor allowing custom cables to be made at the job site. A special crimping tool and wrench set are required to assemble the connector. For 10 AWG USE-2 wire. Assembly tools are on the next page.



Connector description	Item code	Price
SolarLok male neutral connector	099-01359	\$4.80
SolarLok female negative connector	099-01365	\$4.80

ALL NEW! PV Cable Assembly Tools

We have tools from Multi-Contact and Tyco for crimping the pins on their connectors. There is a tool for each type of connector. We also have a high quality tool from Rennsteig that has a set of dies and positioners for MC Solarline 1 and 2 and Tyco connectors, for 10, 12 and 14 AWG wire.

MC Solarline 1 also requires a second tool to put the rubber boot on the pin after it has been crimped to the wire.

MC Solarline 1 Assembly Tools

Crimper and boot assembly tool for Solarline 1 connectors. These tools are supplied by Multi-Contact.



Description	Item code	Price
MC Solarline 1 crimper PV-CZL	094-00116	\$952
MC Solarline 1 boot assembly tool, bench mount	094-00108	\$570

MC Solarline 2 Crimping Tool

Crimping tool to assemble MC Solarline 2 locking connectors. Crimping tool is for 10 or 12 AWG stranded wire.



Description	Item code	Price
MC Solarline 2 pin crimper for 10/12 AWG wire	094-00104	\$712

Tyco SolarLok Crimping Tool

Crimping tool to assemble SolarLok locking connectors. Crimping tool is for 10 or 12 AWG stranded wire.



Description	Item code	Price
Tyco crimper for 10/12 AWG wire	094-00114	\$410

Rennsteig Crimping Tool for Tyco and MC

This crimping tool comes with 3 die-sets and 3 pin positioners for crimping MC Solarline 1 and Solarline 2 pins and Tyco Solarlok pins on 14, 12 and 10 AWG stranded wire. Comes with a molded plastic carrying case.



Description	Item code	Price
Rennsteig crimper set for 14, 12 and 10 AWG	094-00123	\$1105
Rennsteig stripper for 14, 12 and 10 AWG	094-00128	call
Rennsteig cutter for 14, 12 and 10 AWG	094-00129	call

Waterproof Strain Reliefs



Use the 1/2" threaded connectors to provide a waterproof entrance or exit for wiring on PV module junction boxes, outdoor combiner boxes, and junction boxes. Use the 3/4" connector for larger cables up to 5/8" diameter. They are made of Nylon with Buna-N seals and are resistant to salt water, weak acids, weak alkalis, alcohol, ether, esters, ketones, and mineral, animal and vegetable oils. The threads are 1/2" or 3/4" NPT. Non-corrosive and suitable for direct burial installations. The oval-hole 1/2" strain relief works great for two-conductor TC cable used for module interconnects and for PV outputs or for UF cable. The two-hole 1/2" connector is designed for use with two #10 or #12 type USE conductors like the ones used for Multi-Contact PV output cables. UL Listed. Suitable for use in NEMA 4, 6 and 12 applications.

Strain relief description	Fits cable size	Item code	Price
1/2" Thread w/ 1 round hole	USE #12 & #10	054-03243	\$3.75
1/2" Thread w/ 2 round holes	USE #12 & #10	054-03252	\$4.80
1/2" Thread w/ 1 round hole	0.25" to 0.5" dia. wire	054-03241	\$2.60
1/2" Thread w/ 1 oval hole	14/2,12/2,10/2 TC	054-03257	\$4.40
3/4" Thread w/ 1 round hole	0.4" to 0.7" dia. cable	054-03246	\$3.90
Steel lock nut 1/2"		054-03238	\$0.18
Steel lock nut 3/4"		054-03244	\$0.20

Cable Clip

Use this clip to keep module interconnect cables neatly connected to module frames so they do not drop below the array. Bags of 100 clips with anti-corrosion coating.



Description	Item code	Price
Bag of 100 clips for 10-12 AWG USE-2	052-09101	\$35
Bag of 100 clips for 10-12 AWG USE-2 - stainless	052-09100	\$38
Bag of 100 clips for AWG 10 PV Wire - stainless	052-09102	\$40
Acme cable clip from Wiley - stainless - each	051-04021	\$0.52

Wall Plate Lighter Receptacle

This receptacle comes with a chrome plated cover that fits a standard single gang outlet box. This heavy duty outlet is made of brass and steel so it can handle up to 20 amps. The positive connection is a 10-32 threaded stud with nuts. The negative connection is a short piece of 18 gauge wire. If you plan to use more than 10 amps, replace negative wire with 12 AWG. The negative connection of the outlet is connected to the steel cover, so it is a good idea to use a steel junction box with the negative wire connected to the box as well as the negative lead on the outlet.



Description	Item code	Price
Wall plate receptacle	055-01038	\$5

Extension Cord with Battery Clips



10-foot extension cord with lighter receptacle at one end and color coded battery clips at the other. 16 gauge wire.

Description	Item code	Price
Extension cord with clips	055-01035	\$11

Double Receptacle

Plug two devices into the same outlet with this heavy duty “Y” connector. Leads are 6 inches long 16 gauge wire.



Description	Item code	Price
Inline double receptacle	055-01030	\$7

Inline Lighter Receptacle



Lighter receptacle with a 12-inch 16 AWG wire. Maximum current is 10 amps.

Description	Item code	Price
Inline receptacle with 1/2" wire	055-01033	\$5

Lighter Plug

This heavy-duty plug is made from high heat thermoset plastic to prevent distortion at high temperatures. It comes with an easy to replace 3-amp glass fuse, but any AGC type fuse up to 15 amps may be used. Wire connections should be soldered. Screw together assembly requires no tools.



Description	Item code	Price
Lighter plug	055-01027	\$3

Lighter Plug Extension Cord



15-foot extension cord with lighter plug at one end and lighter receptacle at the other. 16 gauge wire.

Description	Item code	Price
Lighter extension cord	055-01036	\$9

RV Roof Connector

The roof outlets are typically installed on RV roofs to allow for later installation of PV modules without adding a new roof penetration.



They are a great waterproof method to bring wires through an RV roof. Cords below mate to roof outlet. They are typically used to connect PV modules to the roof outlet. Cable 055-01110 and 055-01113 have unjacketed wire with one red conductor and one black conductor. Cable 055-01111 has 20 feet of jacketed type TC cable with red and black conductors.

Description	Item code	Price
RV roof outlet	055-01109	\$4
Connector with 5', #12 AWG cable	055-01110	\$5
Connector with 20', #10 AWG cable	055-01111	\$20
Connector with 10-inch cable	055-01113	\$3