

# Bright Solutions Solar Power Wire and Cable



# From cell to inverter, we make solar shine

**F**rom residential rooftops to solar farms harvesting energy, Alpha Wire presents a product portfolio to help engineers and installers create reliable, durable solar systems. Our solar cables and photovoltaic wire are designed for the harsh environments of solar energy applications—the hot and cold of climate extremes, ozone and UV radiation, moisture, oil, and direct burial. Our specially formulated PVC jackets provide years of reliable service by withstanding the potential environments without failing or degrading.

## A full range for power and control

Regardless of your panel-to-grid needs, we have the product to satisfy it. With wire and cable in a range of gauges and conductor counts, Alpha has the solar solution. Alpha also has the accessories, from flexible conduit to heat-shrink tubing, to help you manage the system for faster installation, easier maintenance, and reliable operation.

Our cables meet regulatory and industry requirements for

photovoltaic application. This includes UL Subject 4703 Type PV.

## The cables you trust. The service you deserve.

Every application is critical and wire failure is not an option when the reliability of your equipment and the safety of personnel are paramount. Specify Alpha cable for harsh solar power applications: the integrity of your system is only as robust as the products you use.

## Service and support, second-to-none

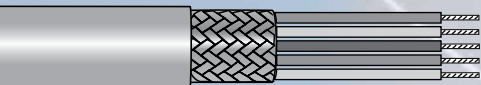
Selecting the correct cable for your critical application is essential to overall system reliability, performance, and safety. So we make it easy for you to select the

right Alpha cable for your specific application. Our online resources include a wire and cable selection guide, technical information, full product catalog, and a distributor locator to make it easy to select and get the cable you need.

Can't find what you're looking for? Design the cable to your specification. It's easy, just visit [www.alphawire.com](http://www.alphawire.com)!

## Applications

- Panel monitoring and control
- Panel to junction box
- Panel to collector
- Collector to inverter
- Grounding
- Motor supply



## Photovoltaic wire

Our photovoltaic wire gives you flexible choices to meet UL 4703 PV wire and UL 4703 PV wire/TÜV 2 PFG 1169 wire requirements.



Double insulated for maximum durability

	UL 4703 PV Wire	UL 4703 PV Wire/TÜV 2 PFG 1169
<b>Conductors</b>	Stranded tinned copper (30 AWG strands)	Stranded tinned copper
<b>Insulation Material</b>	XL-PE	LSZH
<b>Jacket Material</b>	PVC	LSZH
<b>Bend Radius</b>	10x	4x static/5x dynamic
<b>Flammability</b>	UL VW-1	IEC 60332-1 IEC 60754-1 and 60754-2 IEC 61034-2 UL VW-1
<b>Voltage Rating</b>	UL: 2000 V	UL: 600 V/TÜV: 1000 V
<b>Features</b>	Sunlight, ozone, and UV resistant Moisture resistant RoHS compliant REACH compliant -40°C to +90°C temperature range	

Part No.		Wire Size		Nominal Diameter			
UL 4703 PV Wire	UL 4703 PV Wire/TÜV 2 PFG 1169	AWG	mm <sup>2</sup>	UL 4703 PV Wire		UL 4703 PV Wire/TÜV 2 PFG 1169	
				Inch	mm	Inch	mm
<b>PV1430</b>	<b>PVT1430</b>	14	2.54	0.267	6.78	0.228	5.79
<b>PV1230</b>	<b>PVT1228</b>	12	4.51	0.286	7.26	0.248	6.30
<b>PV1030</b>	<b>PVT1028</b>	10	6.77	0.311	7.90	0.268	6.81
<b>PV0830</b>	<b>PVT0826</b>	8	10.00	0.390	9.91	0.357	9.07
<b>PV0630</b>	<b>PVT0626</b>	6	16.40	0.433	11.00	0.412	10.46
<b>PV0430</b>	<b>PVT0426</b>	4	25.50	0.491	12.47	0.463	11.76
<b>PV0230</b>	<b>PVT0226</b>	2	35.80	0.558	14.17	0.518	13.16

## Series M and P control cables



Series M and P cables set the performance standard for stationary cable tray applications with light to moderate flexing. They feature

tough abrasion-resistant and sunlight-resistant jackets. Series M cables offer good resistance to oil and chemicals, while Series P cables'

thermoplastic elastomer jacket offers enhanced resistance and increased flexibility for easier routing.

	Series M	Series P
<b>Size</b>	18 - 8 AWG	18 - 8 AWG
<b>No. of Conductors</b>	3 - 65	3 - 65
<b>Insulation</b>	PVC/nylon	PVC/nylon
<b>Jacket</b>	Oil-resistant PVC	Oil-resistant TPE
<b>Approvals</b>	UL Type TC-ER (600 V) UL Type MTW (600 V) UL Type PLTC (300 V) (18-12 AWG only) UL Type WTTC (1000 V)	UL Type TC-ER (600 V) UL Type PLTC (300 V) (18-12 AWG only) CSA C(UL) CIC Control (600 V) CSA C(UL) TC (600 V)
<b>Features</b>	Direct burial Sunlight resistant Oil Res. I	Sunlight resistant Oil Res. I/II
<b>Temperature Range</b>	-25°C to 90°C	-25°C to 90°C

## Solar cable for every solar application

Our new multiconductor solar cable is the cable designed for any solar application. It is rated for direct burial. It handles extreme temperatures. It's rated for temperatures as low as -40°C static and -30°C bending and as high as 90°C. And its tough, abrasion-resistant jacket also resists

sunlight, ozone, and UV radiation. Designed specifically for solar inverters and similar applications, it's the perfect choice that goes wherever your solar farm is installed.

- TC-ER
- UL MTW
- VW-1
- FT-1
- 1000 V
- Stranded bare copper conductors

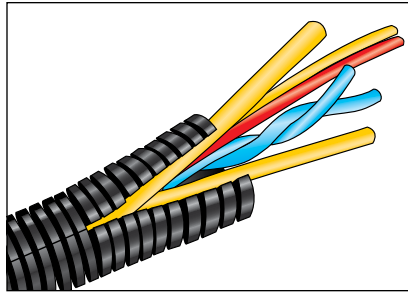
- PVC jacket
- PVC/nylon insulation
- Tinned copper braid shield, 85% coverage
- Sunlight, ozone, and UV resistant
- Direct burial
- Oil Res. I
- Moisture resistant
- 10x bend radius
- Wide temperature range: -40°C static/-30°C bending to +90°C

Part No.		Size		Conductors	Nominal Diameter			
Shielded	Unshielded	AWG	mm <sup>2</sup>		Shielded		Unshielded	
					Inch	mm	Inch	mm
SPM1803CY	SPM1803	18	0.96	3	0.329	8.36	0.301	7.65
SPM1804CY	SPM1804	18	0.96	4	0.354	8.99	0.326	8.28
SPM1805CY	SPM1805	18	0.96	5	0.381	9.68	0.353	8.97
SPM1807CY	SPM1807	18	0.96	7	0.409	10.39	0.381	9.68
SPM1809CY	SPM1809	18	0.96	9	0.466	11.84	0.438	11.13
SPM1603CY	SPM1603	16	1.32	3	0.351	8.92	0.323	8.20
SPM1604CY	SPM1604	16	1.32	4	0.378	9.60	0.350	8.89
SPM1605CY	SPM1605	16	1.32	5	0.408	10.36	0.380	9.65
SPM1607CY	SPM1607	16	1.32	7	0.439	11.15	0.411	10.44
SPM1609CY	SPM1609	16	1.32	9	0.509	12.93	0.475	12.06
SPM1403CY	SPM1403	14	2.08	3	0.381	9.68	0.353	8.97
SPM1404CY	SPM1404	14	2.08	4	0.412	10.46	0.384	9.75
SPM1405CY	SPM1405	14	2.08	5	0.446	11.33	0.418	10.62
SPM1407CY	SPM1407	14	2.08	7	0.481	12.22	0.453	11.51
SPM1409CY	SPM1409	14	2.08	9	0.590	14.99	0.556	14.12
SPM1203CY	SPM1203	12	3.30	3	0.422	10.72	0.394	10.01
SPM1204CY	SPM1204	12	3.30	4	0.458	11.63	0.430	10.92
SPM1205CY	SPM1205	12	3.30	5	0.497	12.62	0.469	11.91
SPM1207CY	SPM1207	12	3.30	7	0.574	14.58	0.510	12.95
SPM1209CY	SPM1209	12	3.30	9	0.659	16.74	0.625	15.88

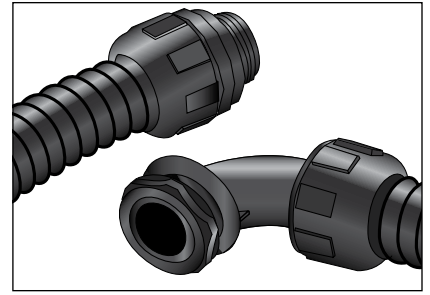


## Manage, ground, and protect

We have a wide range of wire management accessories to make any installation easier to manage and maintain. Here are a few examples. Visit [www.alphawire.com](http://www.alphawire.com) to learn more.



Slit Loom Tubing



Liquid-Tight Flexible PVC Tubing

### Type 492 slit loom tubing

- Simplifies installation and protects cable
- Available in inside diameters from 1/4 inch to 2 inches
- Full-length slit allows conduit to be slid over cable
- Easy cable breakouts for routing flexibility
- -40°C to +93°C temperature range
- Black polyethylene

Part No.	Inside Diameter		Outside Diameter	
	Inch	mm	Inch	mm
492250	0.266	6.76	0.386	9.80
492350	0.360	9.14	0.511	12.98
492413	0.418	10.62	0.583	14.81
492500	0.495	12.57	0.682	17.32
492625	0.621	15.77	0.820	20.83
492750	0.733	18.62	0.970	24.64
492100	1.045	26.54	1.278	32.46
492150	1.607	40.82	1.907	48.44
492200	2.004	50.90	2.337	59.36

### Liquid-tight flexible PVC tubing

- Water, oil, UV, and corrosion resistant
- Withstands flexing and vibration
- -18°C to +50°C
- Companion connectors

PVC Tubing	Part No.		Size (In.)
	Nylon Connectors		
	Straight	Right Angle	
FNT1/4	SLC1/4	—	1/4
FNT3/8	SLC1/2	RLC3/8	1/2
FNT1/2	SLC3/8	RLC1/2	3/8
FNT3/4	SLC3/4	RLC3/4	3/4
FNT1	SLC1	RLC1	1

### Solid bus bar wire

- 12 to 6 AWG
- Tinned copper
- Meets NEC 705.2 for panel grounding

Part No.	Wire Size		Rating Specification
	AWG	mm	
289	12	0.081	A-A-59551 Type S
908	8	0.129	ASTM B 33, A-A-59551 Type S
906	6	0.162	ASTM B 33, A-A-59551 Type S



## FIT® heat-shrink tubing

FIT heat-shrink tubing seals and protects wire and cables from environmental and mechanical abuse—with a wide variety of shrink ratios and

materials. The FIT line consists of various tubing types, each designed with unique attributes that offer tubing solutions for the broadest possible range of applications and environments.



### FIT-260, Irradiated Polyolefin, 2:1 Shrink Ratio, -55°C to +135°C

- Approved for 600 V ground lead identification
- Green with yellow stripe

Part No.	Min Supplied ID		Max Recovered ID		Nominal Recovered Wall	
	Inch	mm	Inch	mm	Inch	mm
<b>FIT-260-1/8</b>	0.125	3.18	0.062	1.57	0.020	0.51
<b>FIT-260-1/4</b>	0.250	6.35	0.125	3.18	0.025	0.64
<b>FIT-260-3/8</b>	0.375	9.53	0.187	4.75	0.025	0.64
<b>FIT-260-1/2</b>	0.500	12.70	0.250	6.35	0.025	0.64
<b>FIT-260-3/4</b>	0.750	19.05	0.375	9.53	0.030	0.76
<b>FIT-260-1</b>	1.000	25.40	0.500	12.70	0.035	0.89

### FIT-300, Semirigid Irradiated Polyolefin, 2.5:1 Shrink Ratio, -55°C to +125°C

- Meltable inner wall to encapsulate without adhesive

Part No.	Min Supplied ID		Max Recovered ID		Nominal Recovered Wall	
	Inch	mm	Inch	mm	Inch	mm
<b>FIT-300-1/8</b>	0.125	3.18	0.023	0.58	0.038	0.97
<b>FIT-300-3/16</b>	0.187	4.75	0.060	1.52	0.043	1.09
<b>FIT-300-1/4</b>	0.250	6.35	0.080	2.03	0.047	1.19
<b>FIT-300-3/10</b>	0.300	7.62	0.050	1.27	0.100	2.54
<b>FIT-300-3/8</b>	0.375	9.53	0.135	3.43	0.050	1.27
<b>FIT-300-1/2</b>	0.500	12.70	0.195	4.95	0.055	1.40
<b>FIT-300-3/4</b>	0.750	19.05	0.313	7.95	0.065	1.65

### FIT-750, Adhesive-Lined Polyolefin, 2:1 Shrink Ratio, -55°C to +110°C

- Mastic lined
- Bonds to most materials
- High-voltage splicing: to 1 kV

Part No.	Min Supplied ID		Max Recovered ID		Nominal Recovered Wall	
	Inch	mm	Inch	mm	Inch	mm
<b>FIT-750-1/4</b>	0.250	6.35	0.125	3.18	0.030	0.76
<b>FIT-750-3/8</b>	0.375	9.53	0.187	4.75	0.031	0.79
<b>FIT-750-1/2</b>	0.500	12.70	0.250	6.35	0.032	0.81
<b>FIT-750-3/4</b>	0.750	19.05	0.375	9.53	0.037	0.94
<b>FIT-750-1IN</b>	1.000	25.40	0.500	12.70	0.039	0.99
<b>FIT-750-1-1/2</b>	1.500	38.10	0.750	19.05	0.046	1.17

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