

# Renewable Energy Wind Power Wire and Cable



# Renewable power from the wind

## Reliable cables from Alpha Wire

The future of wind power as a renewable source of energy is bright. The explosive growth in wind turbines makes system reliability even more crucial in preventing costly truck rolls and even more expensive downtime. Since the cables you choose for your turbine system play a critical role in overall system reliability, rely on Alpha Wire for cables with an unmatched combination of performance, reliability, and quality to keep turbines delivering energy day in and day out.



**Xtra-Guard® ADV (4)** performance cable is designed to withstand the temperature extremes of the wind turbine environment. Its durable construction offers three times the low-temperature flexibility of ordinary PVC, provides good resistance to oils, solvents, chemicals, and fuels, and is approved for wind turbine tray cable (WTTTC) applications. When specified with our Supra-Shield® combination foil/braid shield, it provides exceptional protection against EMI.



**Xtra-Guard Flex Torsion** cable withstands continuous flexing, including multi-axis torsional movements, making it an excellent choice for wind vanes and anemometers that experience random movement. Wind turbine applications include actuators, automation networks, control circuits, sensors, pitch/yaw controls, and power supply circuits.



**Xtra-Guard Flex Motor Supply** cable achieves excellent flexibility in a tough abrasion- and oil-resistant design. The symmetrical configuration makes installation easier, and the combination foil/braid shielding gives exceptional EMC performance. With a diameter smaller than most comparable motor supply cables, it is well suited for the tight spaces in wind turbines for connecting AC drives, servo drives, and variable-frequency drives.



**Series M** flexible control cables are used for stationary/cable tray and for light to moderate flexing applications. With MTW and WTTTC approvals, Series M cables offer excellent resistance to oil, chemicals, and sunlight. Cables come in 18 to 8 AWG with up to 65 conductors. Cables are available with black, blue, or red cable insulation to match use in AC or DC circuits.



**Series V** VFD cable is designed specifically for the needs of variable-frequency drives, combating the continuous dielectric stresses, with no degradation under heavy electrical load or voltage irregularities such as harmonics, corona discharges, and power distortion. The cable's round geometry ensures a symmetrical profile and a corresponding roundness to the foil/braid shield to promote a low capacitance profile, which allows for increased length cable runs.



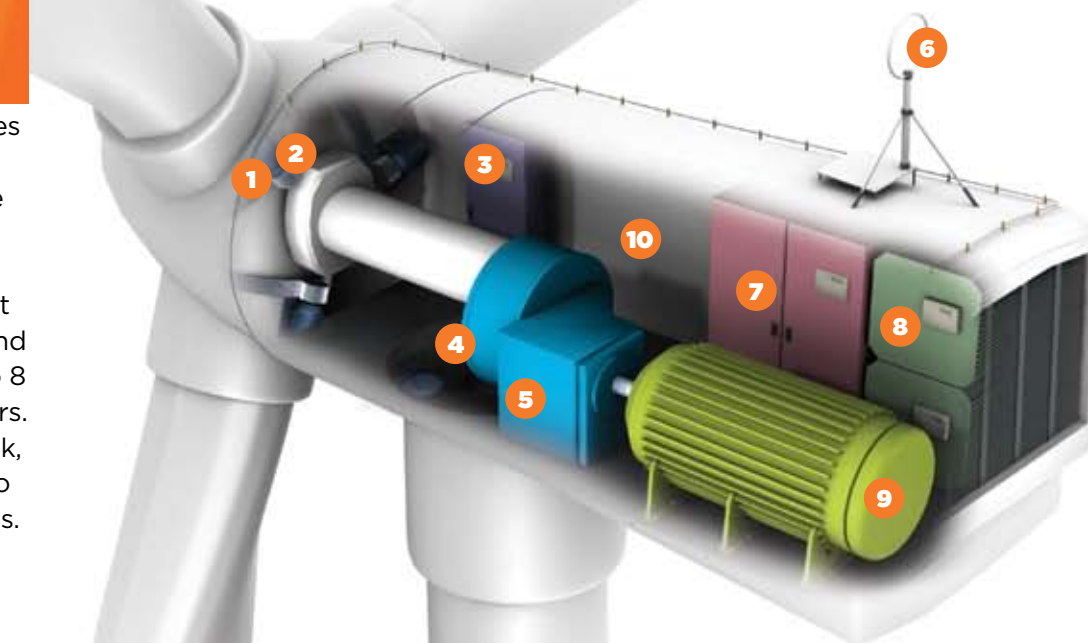
**Instrumentation** cables are available in a wide range of configurations for monitoring and telemetry needs.

### Specifications

Alpha Wire offers a broad range of cables for wind power applications

	Xtra-Guard ADV (4) Cable	Xtra-Guard High-Flex Torsion Cable	Motor Supply Cable	Series M Flexible Control Cable	V Series Cable	Instrumentation Cables
<b>Temperature Range</b>	-50°C to 125°C	-30 to +80	25°C to +90°C	-25°C to +90°C	-25°C - +90°C	-20°C to +105°C (PLTC) -20°C to +90°C (TC)
<b>Voltage Rating</b>	600/300	600	600	600	600/1000	600/300
<b>Conductor Range</b>	24 - 14 AWG	24 - 10 AWG	16 - 6 AWG	18 - 8 AWG	16 - 4/0 AWG	22 - 12 AWG
<b>No. of Conductors</b>	2 - 40 multiconductor 1 - 27 pairs	3 - 7	4	3 - 65	4 4 + brake pair	1 - 35 pairs 1 - 8 triads
<b>UL</b>	AWM Style 20238 TC-ER (600 V) PLTC (300 V)	AWM 20234 MTW	TC-ER (600 V) MTW	TC-ER (600 V) MTW PLTC (300 V)	TC-ER (600 V) Flexible Motor Supply Cable (1000 V)	PLTC (300 V) TC (600 V)
<b>WTTTC Approval</b>	Yes	Yes	Yes	Yes	-	-
	AWM I/II A/B FT-1	AWM I/II A/B FT-1	AWM I/II A/B FT-4	AWM I/II A/B	AWM I/II A/B	CMG FT4
<b>Shielding Options</b>	Unshielded Foil shield Supra-Shield foil/ braid shield	Unshielded Braid shield	Foil/braid shield	Unshielded	Foil/braid shield	Unshielded Foil shield Foil/braid shield
<b>Oil Resistant</b>	Good	Excellent	Good	Good	Good	-
<b>UV Resistant</b>	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
<b>Motor Size*</b>	FHP to 12 hp	FHP to 20 hp	10 to 40 hp	-	10 to 175 hp	-

Motor sizes are approximate and are based on 460V, 3 phase motors. Consult NEC Article 430 for sizing requirements.



#### 1 Pitch Drive

Xtra-Guard ADV (4) Cable  
Xtra-Guard Flex Motor Supply Cable  
Series V Cable

#### 2 Pitch and Azimuth Drive

Xtra-Guard ADV Cable  
Xtra-Guard Flex Motor Supply Cable  
Series V Cable

#### 3 Blade Pitch & Azimuth Control System

Xtra-Guard ADV Cable  
Xtra-Guard Flex Torsion Cable  
Instrumentation Cable

#### 4 Yaw Drive

Xtra-Guard ADV Cable  
Xtra-Guard Flex Motor Supply Cable  
Series V Cable

#### 5 Gearbox

Xtra-Guard ADV Cable  
Xtra-Guard Flex Motor Supply Cable  
Series V Cable  
M Series Motor Supply Cable

#### 6 Wind Vane/Anemometer

Xtra-Guard ADV Cable  
Xtra-Guard Flex Motor Supply Cable  
M Series Motor Supply Cable  
Instrumentation Cable

#### 7 Control Box

Xtra-Guard ADV Cable  
M Series Motor Supply Cable  
Instrumentation Cable

#### 8 Inverter

Xtra-Guard ADV Cable  
Xtra-Guard Flex Motor Supply Cable  
Series V Cable

#### 9 Generator

Xtra-Guard ADV Cable  
Xtra-Guard Flex Motor Supply Cable  
M Series Motor Supply Cable  
Series V Cable

#### 10 Pumps, Fans, Heaters

Xtra-Guard ADV Cable  
Xtra-Guard Flex Motor Supply Cable  
M Series Motor Supply Cable  
Series V Cable

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

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

## Superior availability

Alpha offers cables for wind power from stock in most sizes and constructions, in both small and large put-ups, so you can order it when you need it. Our products are available for same-day shipment, eliminating long lead times.

## 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 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)**!

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