

# Renewable Energy

## Wind Power Wire and Cable Portfolio



# 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® 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 (WTTC) applications. When specified with our Supra-Shield® combination foil/braid shield, it provides exceptional protection against EMI.



**Series XM** flexible control cables combine a premium-grade PVC jacket and finely stranded conductors to offer continuous-duty flexing without cracking or degrading. Series XM cable offers a durable, oil-resistant construction that prevents contamination from hazardous fluids and protects against abrasion. The WTTC-rated cable is 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.

## Specifications

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

	Xtra-Guard 4 Cable	Flexible Motor Supply Cable	Series M Control Cable	Series XM Flexible Control Cable	Series V VFD Cable	Series SF Flexible Servo Control Cable
<b>Temperature Range</b>	-50°C to +125°C	-25°C to +90°C	-25°C to +90°C	-30°C to +90°C	-25°C to +90°C	-25°C to +90°C
<b>Voltage Rating</b>	1000/600/300	1000/600	1000/600/300	1000/600	1000/600	1000/600
<b>Conductor Range</b>	24 - 14 AWG	16 - 6 AWG	18 - 8 AWG	18 - 8 AWG	16 - 4/0 AWG	18 - 8 AWG
<b>No. of Conductors</b>	2 - 40 multiconductor 1 - 27 pairs	4	3 - 65	3 - 65	4 4 + brake pair	4 4 + 2 pairs
<b>UL</b>	AWM Style 20238 TC-ER (600 V) PLTC (300 V)	TC-ER (600 V) MTW	TC-ER (600 V) MTW PLTC (300 V)	TC-ER (600 V) MTW	TC-ER (600 V) Flexible Motor Supply Cable (1000 V)	TC-ER (600 V)
<b>WTTC Approval</b>	Yes	Yes	Yes	Yes	—	Yes
<b>CSA</b>	AWM I A/B, II A/B FT1	AWM I A/B, II A/B FT4	AWM I A/B, II A/B FT4	AWM I A/B, II A/B FT4	AWM I A/B, II A/B FT4	AWM I A/B, II A/B FT4
<b>Shielding Options</b>	Unshielded Foil shield Supra-Shield foil/ braid shield	Foil/braid shield	Unshielded	Unshielded Braid shield	Foil/braid shield	Foil/braid shield
<b>Oil Resistance</b>	Good	Good	Good	Good	Good	Good
<b>UV Resistant</b>	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
<b>Motor Size*</b>	FHP to 12 hp	10 to 40 hp			10 to 175 hp	

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



**Flexible 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 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.



**Series SF** flexible servo cables are designed specifically for connecting power between the supply and servo motors, drives, and controllers. They are suited to flexing applications that require continuous movement. The four-conductor cables are available with or without optional shielded pairs for brake and temperature control.



**Series M** 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.



**1 Pitch Drive**

- Xtra-Guard 4 Cable
- Flexible Motor Supply Cable
- Series V VFD Cable
- Series SF Flexible Servo Cable

**2 Pitch and Azimuth Drive**

- Xtra-Guard 4 Cable
- Flexible Motor Supply Cable
- Series V VFD Cable
- Series SF Flexible Servo Cable

**3 Blade Pitch & Azimuth Control System**

- Xtra-Guard 4 Cable
- Series XM Flexible Control Cable

**4 Yaw Drive**

- Xtra-Guard 4 Cable
- Flexible Motor Supply Cable
- Series V VFD Cable

**5 Gearbox**

- Xtra-Guard 4 Cable
- Flexible Motor Supply Cable
- Series V VFD Cable
- Series SF Flexible Servo Cable

**6 Wind Vane/Anemometer**

- Xtra-Guard 4 Cable
- Series M Motor Supply Cable

**7 Control Box**

- Xtra-Guard 4 Cable
- Series M Motor Supply Cable

**8 Inverter**

- Xtra-Guard 4 Cable
- Flexible Motor Supply Cable
- Series V VFD Cable
- Series SF Flexible Servo Cable

**9 Generator**

- Xtra-Guard 4 Cable
- Flexible Motor Supply Cable
- Series V VFD Cable
- Series SF Flexible Servo Cable
- Series M Motor Supply Cable

**10 Pumps, Fans, Heaters**

- Xtra-Guard 4 Cable
- Flexible Motor Supply Cable
- Series M Motor Supply Cable
- Series V VFD Cable
- Series SF Flexible Servo 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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