

Alpha Wire Industrial Series Tray-Rated Cable

**INDUSTRIAL™
SERIES**
From AlphaWire



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Request free samples at www.alphawire.com/sample

Alpha Wire Industrial Series (AWIS)

Advanced Cable Products for Industrial Applications

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SERIES**
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From the factory floor to process control, the Alpha Wire Industrial Series (AWIS) cable line is well suited to the widest range of industrial applications. We offer a variety of cables for general needs such as control wiring in both stationary and moving components. We also offer application-specific configurations for use with drives, servo systems, and factory protocols.

AWIS cables are crafted for rugged, reliable performance in your industrial equipment. They are designed to handle even your toughest applications, whether your need is continuous flexing, superior oil and chemical resistance, or excellent mechanical and electrical performance.

Choose the AWIS cable with the properties you need:

- TC-ER, PLTC, MTW, and WTTC ratings
- Oil and chemical resistance
- UV resistance
- Direct burial
- Abrasion resistance
- EMI protection
- High flex cycling

AWIS cables provide reliable performance

Series M Control Cable

Excellent mechanical and electrical performance for stationary cable trays

Series P Enhanced Stationary Control Cable

Superior oil and chemical resistance plus easier routing and installation

Series XM Flexible Control Cable

Tough PVC cable for continuous flex control applications

Series F Continuous Flex Control Cables

Rated for up to 20 million rolling flex cycles

Series SF Servo Control Cable

Maximum flexibility in servo control and power

Series V VFD Cables

Double-shielded for superior EMI performance

Series V-Flex VFD Cable

CSA-rated flexible VFD cable

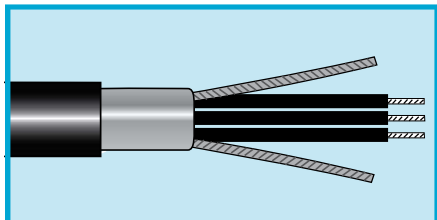
Applications

- Medium-to high-flex equipment
- Factory equipment interconnects
- Robotics
- Machine tools
- Automotive assembly equipment
- Conveyor systems
- Control panels
- Transfer shuttles
- Solar farms
- Automated pick-and-place systems
- PLC-controlled equipment
- Automated handling systems
- Control/monitoring of speed and position

Series V VFD Cable

Enhanced Design for Superior Performance in
Variable-Frequency Drives
600/1000 V Shielded, 3 Conductor

**INDUSTRIAL™
SERIES**
From AlphaWire



Series V cables for variable-frequency drives (VFD) set the standard in high-performance and reliable connectivity. Their specially formulated cross-linked polyethylene insulation provides superior corona resistance, low capacitance for longer runs, and excellent low-temperature properties.

A symmetrical design places the ground wires in the interstices of the conductors for uniform conductor-to-ground capacitance and impedance.

Smaller gauge cable feature a combination foil + braid shield to offer exceptional EMI/RFI protection in noisy environments. On larger gauge cable, a double copper tape is used to provide the same noise-free operation.

This uniformity reduces the probability of motor damage from common-mode current.

Alpha Series V VFD cables are compatible with drives from all major manufacturers.

**UL RHW-2 (16 – 2 AWG)
UL XHHW-2
UL TC-ER
UL 1000V Flexible Motor
Supply Cable
CSA AWM I/II A/B FT4
CE LVD 2006/95/EC
Pennsylvania MSHA**

Operating Temperature

- -40°C to +90°C

Conductor Color Coding

- Black, numbered

Materials

- Stranded tinned copper conductors
- Stranded tinned copper ground wires
- Cross-linked polyethylene insulation (XLPE)

- Shielding
16 – 4 AWG:
Aluminum/polyester/aluminum foil and tinned copper braid with 85% coverage
2 – 4/0 AWG:
Double-layer copper tape
- Black premium PVC jacket

Voltage

- 600 V (UL TC-ER)
- 1000 V (UL Motor Supply)

Features

- UL Direct Burial
- UL Sunlight Resistant
- 10x bend radius
- Suitable for use in Class I, Division 2 locations per Article 501 of the National Electric Code

Availability

Bulk, made to order

FIT® Tubing Recommendations

- FIT-221: General-purpose cross-linked polyolefin
- FIT-321V: Low-shrink-temperature, flame-retardant cross-linked polyolefin

Three-Conductor VFD Cables											
Part No.	Wire Size		Stranding		Shielding	Insulation Thickness		Jacket Thickness		Nominal Diameter	
	AWG	mm²	AWG	mm		Inch	mm	Inch	mm	Inch	mm
V16316	16	1.32	26/30	26 x 0.25	Foil + Braid	0.046	1.17	0.050	1.27	0.468	11.89
V16314	14	2.09	41/30	41 x 0.25	Foil + Braid	0.046	1.17	0.065	1.65	0.538	13.67
V16312	12	3.31	65/30	65 x 0.25	Foil + Braid	0.046	1.17	0.065	1.65	0.578	14.68
V16310	10	5.37	105/30	105 x 0.25	Foil + Braid	0.047	1.19	0.065	1.65	0.642	16.31
V16308	8	8.53	133/29	133 x 0.28	Foil + Braid	0.061	1.55	0.065	1.65	0.798	20.27
V16306	6	13.57	133/27	133 x 0.36	Foil + Braid	0.061	1.55	0.085	2.15	0.924	23.47
V16304	4	21.58	133/25	133 x 0.45	Foil + Braid	0.061	1.55	0.085	2.15	1.050	26.67
V16302	2	34.32	133/23	133 x 0.57	Tape	0.061	1.55	0.085	2.15	1.157	29.39
V16001	1	43.28	133/22	133 x 0.64	Tape	0.056	1.42	0.085	2.15	1.197	30.48
V16000	1/0	54.58	133/21	133 x 0.72	Tape	0.056	1.42	0.085	2.15	1.294	32.77
V16020	2/0	68.85	133/20	133 x 0.81	Tape	0.056	1.42	0.085	2.15	1.399	35.56
V16030	3/0	86.9	133/19	133 x 0.91	Tape	0.056	1.42	0.085	2.15	1.517	38.53
V16040	4/0	109	133/18	133 x 1.02	Tape	0.056	1.42	0.085	2.15	1.653	41.98

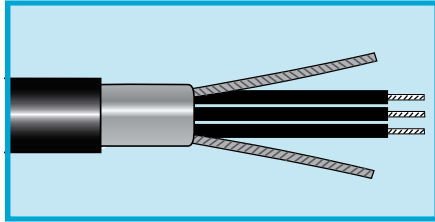


Alpha Wire | www.alphawire.com | 1-800-52 ALPHA

Specifications subject to change. For complete specifications and availability, visit www.alphawire.com.

Series V VFD Cable

Enhanced Design for Superior Performance in
Variable-Frequency Drives
600/1000 V Shielded, 4 Conductor



Series V cables for variable-frequency drives (VFD) set the standard in high-performance and reliable connectivity. Their specially formulated cross-linked polyethylene insulation provides superior corona resistance, low capacitance for longer runs, and excellent low-temperature properties.

A symmetrical design places the ground wires in the interstices of the conductors for uniform conductor-to-ground capacitance and impedance.

Smaller gauge cable feature a combination foil + braid shield to offer exceptional EMI/RFI protection in noisy environments. On larger gauge cable, a double copper tape is used to provide the same noise-free operation.

This uniformity reduces the probability of motor damage from common-mode current.

Alpha Series V VFD cables are compatible with drives from all major manufacturers.

**UL RHW-2 (16 – 2 AWG)
UL XHHW-2
UL TC-ER
UL 1000V Flexible Motor
Supply Cable
CSA AWM I/II A/B FT4
CE LVD 2006/95/EC
Pennsylvania MSHA**

Operating Temperature

- -40°C to +90°C

Conductor Color Coding

- Black, numbered

Materials

- Stranded tinned copper conductors
- Stranded tinned copper ground wires
- Cross-linked polyethylene insulation (XLPE)

- Shielding
16 – 4 AWG:
Aluminum/polyester/aluminum foil and tinned copper braid with 85% coverage
2 – 4/0 AWG:
Double-layer copper tape
- Black premium PVC jacket

Voltage

- 600 V (UL TC-ER)
- 1000 V (UL Motor Supply)

Features

- UL Direct Burial
- UL Sunlight Resistant
- 10x bend radius
- Suitable for use in Class I, Division 2 locations per Article 501 of the National Electric Code

Availability

Bulk, made to order

FIT® Tubing Recommendations

- FIT-221: General-purpose cross-linked polyolefin
- FIT-321V: Low-shrink-temperature, flame-retardant cross-linked polyolefin

Four-Conductor VFD Cable with 14 AWG (2.09) Brake Pair

Part No.	Wire Size		Stranding		Shielding	Insulation Thickness		Jacket Thickness		Nominal Diameter	
	AWG	mm ²	AWG	mm		Inch	mm	Inch	mm	Inch	mm
V16116	16	1.32	26/30	26 x 0.25	Foil/Braid	0.047	1.19	0.065	1.65	0.717	18.21
V16114	14	2.09	41/30	41 x 0.25	Foil/Braid	0.047	1.19	0.065	1.65	0.743	18.87
V16112	12	3.31	65/30	65 x 0.25	Foil/Braid	0.047	1.19	0.065	1.65	0.785	19.94
V16110	10	5.37	105/30	105 x 0.25	Foil/Braid	0.047	1.19	0.085	2.15	0.875	22.23
V16108	8	8.53	133/29	133 x 0.28	Foil/Braid	0.061	1.55	0.085	2.15	1.032	26.21

Four-Conductor VFD Cable

Part No.	Wire Size		Stranding		Shielding	Insulation Thickness		Jacket Thickness		Nominal Diameter	
	AWG	mm ²	AWG	mm		Inch	mm	Inch	mm	Inch	mm
V16016	16	1.32	26/30	26 x 0.25	Foil + Braid	0.047	1.19	0.065	1.65	0.547	13.89
V16014	14	2.09	41/30	41 x 0.25	Foil + Braid	0.047	1.19	0.065	1.65	0.584	14.83
V16012	12	3.31	65/30	65 x 0.25	Foil + Braid	0.047	1.19	0.065	1.65	0.633	16.08
V16010	10	5.37	105/30	105 x 0.25	Foil + Braid	0.047	1.19	0.085	2.15	0.746	18.95
V16008	8	8.53	133/29	133 x 0.28	Foil + Braid	0.061	1.55	0.086	2.15	0.920	23.37
V16006	6	13.57	133/27	133 x 0.36	Foil + Braid	0.061	1.55	0.086	2.15	1.017	25.83
V16004	4	21.58	133/25	133 x 0.45	Foil + Braid	0.061	1.55	0.086	2.15	1.157	29.39
V16002	2	34.32	133/23	133 x 0.57	Foil + Braid	0.061	1.55	0.088	2.15	1.308	33.22



Series V VFD and V-Flex Cable Selection Guide

Drive HP	115 VAC, 3 Phase					230 VAC, 3 Phase				
	Wire Gauge (AWG)	Full Load Current, Amps	Alpha Wire Part No.			Wire Gauge (AWG)	Full Load Current, Amps	Alpha Wire Part No.		
			Series V		Series VF			Series V		VF
			3 Cond.	4 Cond.	4 Cond.			3 Cond.	4 Cond.	4 Cond.
1/2	16	4.4	V16316	V16016	VF16016	16	2.2	V16316	V16016	VF16016
3/4	16	6.4				16	3.2			
1	16	8.4				16	4.2			
1-1/2	16	12.0				16	6.0			
2	16	13.6				16	6.8			
3	—	—	—	—	—	16	9.6	—	—	—
5	—	—	—	—	—	14	15.2	V16314	V16014	VF16014
7-1/2	—	—	—	—	—	12	22	V16312	V16012	VF16012
10	—	—	—	—	—	10	28	V16310	V16010	VF16010
15	—	—	—	—	—	8	42	V16308	V16008	VF16008
20	—	—	—	—	—	6	54	V16306	V16006	VF16006
25	—	—	—	—	—	4	68	V16304	V16004	VF16004
30	—	—	—	—	—	2	80	V16304	V16004	—
40	—	—	—	—	—	2	104	—	V16002	—
50	—	—	—	—	—	1/0	130	V16000	—	—
60	—	—	—	—	—	2/0	154	V16020	—	—
75	—	—	—	—	—	4/0	192	V16040	—	—

Drive HP	460 VAC, 3 Phase					575 VAC, 3 Phase				
	Wire Gauge (AWG)	Full Load Current, Amps	Alpha Wire Part No.			Wire Gauge (AWG)	Full Load Current, Amps	Alpha Wire Part No.		
			Series V		Series VF			Series V		VF
			3 Cond.	4 Cond.	4 Cond.			3 Cond.	4 Cond.	4 Cond.
1/2	16	1.1	V16316	V16016	VF16016	16	0.9	V16316	V16016	VF16016
3/4	16	1.6				16	1.3			
1	16	2.1				16	1.7			
1-1/2	16	3.0				16	2.4			
2	16	3.4				16	2.7			
3	16	4.8				16	3.9			
5	16	7.6				16	6.1			
7-1/2	16	11				16	9			
10	16	14				16	11			
15	12	21	V16312	V16012	VF16012	14	17	V16314	V16014	VF16014
20	10	27	V16310	V16010	VF16010	12	22	V16312	V16012	VF16012
25	8	34	V16308	V16008	VF16008	10	27	V16310	V16010	VF16010
30	8	40	V16308	V16008	VF16008	10	32	V16310	V16010	VF16010
40	6	52	V16306	V16006	VF16006	8	41	V16308	V16008	VF16008
50	4	65	V16304	V16004	VF16004	6	52	V16306	V16006	VF16006
60	2	77	—	V16002	VF16302	4	62	V16304	V16004	VF16004
75	2	96	—	V16002	VF16302	2	77	—	V16002	VF16302
100	1/0	124	—	V16000	—	2	99	—	V16002	VF16302
125	2/0	156	—	V16020	—	1/0	125	—	V16000	—
150	4/0	180	—	V16040	—	2/0	144	—	V16020	—
200	—	—	—	—	—	4/0	192	—	V16040	—

An Extensive Range of Flexible Cable Solutions

Alpha Wire's industrial cables are well suited to the widest range of industrial applications, from the factory floor to process controls to wind turbines and light-duty VFD applications. We offer an extensive range of cables for general needs such as control wiring in both stationary and moving components. We also offer application-specific configurations for use with motors, drives, and servo systems.

In addition to our AWIS cable family, we offer tougher flexible alternatives in our Xtra-Guard® 65000, 85000, 86000 and 87000 Series cables with up to 14 million flex cycles. For a smaller, lighter flexible control cable, our EcoFlex® flexible control cable and EcoFlex® PUR continuous flex cable can provide up to 55% weight and 40% size savings, and both are completely recyclable. Our flexible motor supply cable provides exceptional performance in a variety of motor and drive applications. We can also create the ideal custom cable for your specific application.

General Application	Cable	Advantages
Stationary	Series M	PVC jacket Oil resistant (Oil Res. I)
Stationary/Minimal Flex	Series P	TPE jacket Improved oil and chemical resistance (Oil Res. I/II)
Moderate Flexing	EcoFlex Cable	100% recyclable mPPE insulation/jacket 1 million flex cycles RoHS and REACH compliant Size and weight reduction
	Xtra-Guard Standard Flex (65000 Series)	1 million flex cycles PVC jacket
	EcoFlex PUR Continuous Flex	Polyurethane jacket, mPPE insulation 8 million flex cycles Zero halogen Saves space and weight
High Flexing	Series XM	12 million flex cycles Oil resistant (Oil Res. I)
	Series F	20 million flex cycles Improved oil and chemical resistance (Oil Res. I/II)
	Xtra-Guard Continuous Flex Data (86000 Series)	6 million flex cycles PVC jacket
	Xtra-Guard Continuous Flex Control (85000 Series)	14 million flex cycles PVC jacket
	Xtra-Guard Torsional Flex (87000 Series)	1 million flex cycles TPE insulation, polyurethane jacket
Servomotors/Drives	Series SF	TPE jacket Enhanced flexibility for easy installation and routing Improved oil and chemical resistance (Oil Res. I/II) With or without brake/ground pairs
VFD Systems	Series V Series V-Flex	Oil resistant (Oil Res. I) Low capacitance for extended runs XLPE insulation for improved dielectric properties Excellent corona resistance Uniform geometry for reduced common-mode current
Motor Supply	Flexible Motor Supply	PVC jacket Oil resistant (Oil Res. I) Suited to light-duty flexing and VFD applications

Cables you trust. Service you deserve.

Every application is critical and cable failure is not an option when the safety of equipment and personnel is paramount. Specify Alpha cable for rugged, reliable performance, since the integrity of your system is only as robust as the products you use.

Custom cable is standard

Alpha Wire goes one step further: manufacturing custom cables to meet unique applications—offering specific conductor counts, shielding options, jacket materials, and versatile product designs. Our custom cable orders are often shipped in less than a week, once again giving you products with more convenience and less delay.

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**!

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AlphaWire

Cables you trust. Service you deserve.