

FIT Wire Management Applications

Harnessing

Make any wire harness organized, manageable, and neat with our tubing, sleeving, spiral wrap tubing, zipper tubing, and lacing tape. Our unique ZIP-GRP expandable enclosure sleeving allows easy re-entry and unlimited wire and cable break outs with its hook and loop fastener system.

Routing

Get the advantages of conduit in a flexible non-metallic, liquid-tight tubing and connection system that protects wire, copper cable, and fiber-optic cable in factories, offices, or underground installations.

Use our watertight tubing to replace rigid raceways where flexibility, re-entry, or re-usability is required. Additionally, Alpha offers slit looms to provide a convenient solution for your routing needs.

Shielding

Add shielding easily and quickly. We offer flat, round, and oval braided shielding for additional protection against EMI and for grounding protection. Our copper foil shielding tape is backed with a highly conductive, pressure-sensitive adhesive for use in a wide variety of EMI/RFI shielding applications in cable and connector assemblies.

Protection

Our rugged FIT sleeving is available in a range of materials and construction to give outstanding performance in a range of extreme applications:

- **Wide temperature ranges**
- **UV exposure**
- **Heavy abrasion and cut-through potential**
- **Outgassing**

Our rugged FIT sleeving is available in both expandable and wrappable versions.

FIT Accessories



FIT-FILL Adhesive

For applications that require additional sealing of voids not accommodated by heat-shrink tubing, FIT-FILL adhesive is the answer. The bead-shaped, flame-retardant adhesive has a melting temperature of 90°C and an operating temperature from -40°C to +105°C, with no cracking with low-temperature flexing down to -40°C. It also offers good chemical and physical resistance.



Heat Guns

Alpha heat guns are the perfect complement to FIT tubing, making it easy to apply the tubing quickly and efficiently.



Wrappable Sleeving Tool

This tool simplifies applying our GRP-130 and GRP-130NF sleeves.



Woven Sleeving

FIT Expandable Woven Sleeving			
Material	Feature	Characteristics	FIT Family
Polyester	General purpose	-75°C to +125°C Good abrasion and cut-through resistance Flame resistant (110) and flame retardant (120) versions	GRP-110 GRP-120
PET	Non-fraying	-75°C to +125°C Good abrasion and cut-through resistance Flame resistant (110) and flame retardant (120) versions	GRP-110NF GRP-120NF
PET	Wrappable	-70°C to +125°C Bends tightly without distorting or opening Easy to install NF = flame retardant	GRP-130 GRP-130NF
Nylon polyamide	Advanced protection	-45°C to +150°C Extreme abrasion resistance without losing flexibility or durability Resists fuels, solvents, salt water, chemicals, and UV rays Expandable to 150%	GRP-160
PPS	Advanced chemical resistance	-70°C to +200°C Resists acids, bases, solvents, and fuels Extremely lightweight	GRP-170
Nylon	Maximum protection	-60°C to +150°C Superior abrasion resistance Smooth inner wall to prevent internal abrasion damage Resists fuels, solvents, salt water, chemicals, and UV rays	GRP-180
PTFE	Extreme protection	-70°C to +280°C Cut and abrasion resistant Resists virtually all chemicals and UV rays Thermally stable Low outgassing	GRP-200
PET	Wrappable with hook and loop closure	-75°C to +125°C Unlimited breakouts Abrasion and cut-through resistance Oil and solvent resistance	ZIP-GRP
FIT Non-Expandable Woven Sleeving			
Material	Feature	Characteristics	FIT Family
PET	Heavy duty	-70°C to +125°C	XS-100HD
Nylon	General purpose	-45°C to +120°C Tightly woven Excellent abrasion resistance and durability	XS-200N
Nylon	Maximum protection	-45°C to +120°C Excellent abrasion resistance Tightly woven Deflects high-pressure hose ruptures Resists fuels, chemicals, UV, rot, and vermin Smooth inner wall to prevent internal abrasion damage	XS-300

The cables you trust. The service you deserve.

Every application is critical and cable failure is not an option when the safety of your equipment and personnel is paramount. Specify Alpha Wire FIT wire management for extreme environments and crucial applications, since the integrity of your system is only as robust as the products you use.

Superior availability

Alpha offers FIT wire management products from stock in most sizes and constructions, in small quantities, so you can order them when you need them. Our products are available for same-day shipment, eliminating long lead times.

Service and support, second-to-none

Selecting the correct wire management products is essential to overall system reliability, performance, and safety. So we make it easy for you to select the right Alpha product 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 or wire management product you need. Just visit **www.alphawire.com**!

GLOBAL HEADQUARTERS
711 Lidgerwood Avenue
Elizabeth, NJ 07207-0711 USA
Toll Free: 1-800-52 ALPHA
Tel: 1-908-925-8000
Fax: 1-908-925-5411
E-mail: info@alphawire.com

EUROPE
Alpha Wire International
Saxon House
1 Downside | Sunbury-on-Thames
Middlesex | United Kingdom | TW16 6RT
Tel: 01 932 772 422
Fax: 01 932 772 433
E-mail: europe@alphawire.com

ASIA PACIFIC
Alpha Wire
Silver Center | Room 1712
North Shanxi Road 1388
Shanghai | China | 200060
Tel: +86-21-61498201/61498205
Fax: +86-21-61498001
E-mail: apac@alphawire.com



AlphaWire

Cables you trust. Service you deserve.

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Customer Specification

PART NO. GRP-110-1/2

Construction

1) Tubing Type	Expandable Sleeving
2) Tubing Material	Braided Polyester
3) Minimum Supplied ID(In)	0.250
4) Maximum Expanded ID (In)	0.750
5) Nominal Wall Thickness +/- 0.005(In)	0.025
6) Number of Carriers	48
7) Number of Yarns	3
8) Total Number of Monofilaments	144
9) Color(s)	BLACK OR NATURAL

Applicable Specifications

1) UL	UZKX2	
2) Military	MIL-I-631	

Environmental

1) EU Directive 2011/65/EU(RoHS2):	
	All materials used in the manufacture of this part are in compliance with European Directive 2011/65/EU regarding the restriction of use of certain hazardous substances in electrical and electronic equipment. Consult Alpha Wire's web site for RoHS C of C.
2) REACH Regulation (EC 1907/2006):	
	This product does not contain Substances of Very High Concern (SVHC) listed on the European Union's REACH candidate list in excess of 0.1% mass of the item. For up-to-date information, please see Alpha's REACH SVHC Declaration.
3) California Proposition 65:	
	The outer surface materials used in the manufacture of this part meet the requirements of California Proposition 65.

Properties

Physical & Mechanical Properties		
1) Temperature Range	-75 to 125°C	
2) Tensile Strength	85000psi, Min	ASTM D638
Electrical Properties		
Chemical Properties		
1) Corrosion(0°C, 16hrs)	no corrosion	AMS-DTL-23053
2) Fungus Resistance	Pass	AMS-DTL-23053
3) Halogen Free	Yes	
4) Lead Free	Yes	

Other

Packaging

www.alphawire.com

Alpha Wire | 711 Lidgerwood Avenue, Elizabeth, NJ 07207

Tel: 1-800-52 ALPHA (25742)

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EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: GRP-110-1/2

GRP-110-1/2 , RoHS-Compliant Commencing With 10/1/2004 Production

Note: all colors and put-ups

This document certifies that the Alpha part number cited above is manufactured in accordance with Directive 2011/65/EU of the European Parliament, better known as the RoHS Directive (commonly known as RoHS 2), with regards to restrictions of the use of certain hazardous substances used in the manufacture of electrical and electronic equipment. This certification extends to amending Directive 2015/863/EU which expanded the list of restricted substances to 10 items (commonly known as RoHS 3) The reader is referred to these Directives for the specific definitions and extents of the Directives. **No Exemptions are required for RoHS Compliance on this item.** Additionally, Alpha certifies that the listed part number is in compliance with China RoHS "Marking for Control of Pollution by Electronic Information Products" standard SJ/T 11364-2014.

Substance	Maximum Control Value
Lead	0.1% by weight (1000 ppm)
Mercury	0.1% by weight (1000 ppm)
Cadmium	0.01% by weight (100 ppm)
Hexavalent Chromium	0.1% by weight (1000 ppm)
Polybrominated Biphenyls (PBB)	0.1% by weight (1000 ppm)
Polybrominated Diphenyl Ethers (PBDE) ,	
Including Deca-BDE	0.1% by weight (1000 ppm)
Bis(2-ethylhexyl) phthalate (DEHP)	0.1% by weight (1000 ppm)
Butyl benzyl phthalate (BBP)	0.1% by weight (1000 ppm)
Dibutyl phthalate (DBP)	0.1% by weight (1000 ppm)
Diisobutyl phthalate (DIBP)	0.1% by weight (1000 ppm)

The information provided in this document and disclosure is correct to the best of Alpha Wire's knowledge, information and belief at the date of its release. The information provided is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it will become part of. The intent of this document is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.

Authorized Signatory for the Alpha Wire:

Dave Watson, Director of Engineering & QA

1/10/2018

Alpha Wire

711 Lidgerwood Ave.

Elizabeth, NJ 07207

Tel: 1-908-925-8000