XTRA•GUARD®

HIGH PERFORMANCE ELECTRONIC CABLES

FROM ALPHA WIRE

In today's world of sophisticated electronics, every application is critical! Computers efficiently monitor and control multi-million dollar production lines and processes.

The integrity of your system is only as solid as the electronic cable on which the control signals are communicated. If the cable fails, your system is down. Production time . . . efficiency . . . profits . . . lost.

If you think that wire and cable is just wire and cable . . . think again.

The cable you install must be capable of efficient signal transmission while it withstands the environmental abuses of heat or cold, intermittent or continuous motion, abrasion, immersion in oils or EMI/RFI interference.

XTRA•GUARD® cables are "hazard-matched" to survive in the most demanding environments. A wide range of designs are available including our newest design . . . **XTRA•GUARD® Flexible Cables.**

Remember, a cable is not just a cable.

Alpha Wire FIT® Tubing For Environmental Cable/Connector Sealing and Protection!

Alpha's **FIT®** Shrinkable Tubing products are the perfect solution to insure that the **XTRA•GUARD®** cable you select will be protected against the extremes of temperature, abrasion, cut through and the effects of oils, water and chemicals.

To make this selection process easier, a suitable **FIT®** Shrinkable Tubing product has been recommended for every **XTRA•GUARD®** cable type.

XTRA•GUARD® 1

Extra-Premium Grade PVC Jacket For Extended Cable Life

UL LISTED — Certified Canadian Standards Association — Passes UL VW-1 Flame Test Underwriters Laboratories Inc.

SPECIFY AND CHOOSE XTRA•GUARD® 1 FOR:

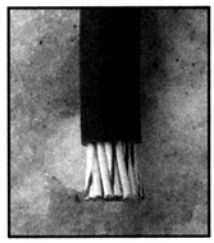
- A General Purpose Electronic Cable for Internal or External Wiring of OEM Equipment
- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- Fully Color-coded, Tinned Copper Conductors
- Premium Grade PVC Insulation and Jacket
- Jacket Colors: Gray and Black
- UL Recognition and CSA Certification
- Available in Both 300 Volt and 600 Volt Cable Styles
- Immediate Availability

XTRA•GUARD® 1 APPLICATIONS:

- EIA RS 232C Interface
- High Technology Applications in Controlled Environments
- Medical Electronics
- Point-Of-Sale Equipment
- Computer Peripherals
- Industrial Process Controls

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-221** – Irradiated Polyolefin (indoor) or
  FIT-321 – Adhesive-lined Polyolefin (outdoor)



XTRA•GUARD® 4

Extra-Protection, High/Low Temperature TPE Jacket

UL LISTED — Certified Canadian Standards Association — Pennsylvania Bureau of Deep Mine Safety Approved P-MWMS-1-85

SPECIFY AND CHOOSE XTRA•GUARD® 4 FOR:

- Unmatched Cable Performance in Both High and Low Temperature Cable Applications from –60°C to +125°C
- Three-times the Low-temperature Flexibility of PVC
- Outstanding Resistance to Oils, Fuels, Solvents and Water
- Low HCL Content for Safety
- Fully Flame-resistant Color-coded TPE (thermoplastic elastomer) Insulated Conductors and a TPE Jacket
- Passes the 210,000 BTU Flame Test
- Available in Both 300 Volt and 600 Volt Cable Styles
- UL Rated Type TC 600 Volt and Type PLTC 300 Volt for Cable Tray Applications
- Pennsylvania Bureau Deep Mine Safety Approved (P-MWMS-1-85) for Mine-wide Monitoring Systems
- Ultraviolet Light Stability (in all colors)
- Jacket Colors: Yellow, Orange, Blue, Green, Red, Black, White and Gray
- UL Recognition and CSA Certification

XTRA•GUARD® 4 APPLICATIONS:

- Wood, Paper, Pulp, Plant Operations
- Mining Instruments and Controls
- Industrial Tray/Power Limited Tray Cable Applications
- Mass Transit Systems
- Military Electronic Applications
- Food and Beverage Plants
- Petrochemical Process Controls
- Arctic Pipeline Controls

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-600** – Highly Flexible Elastomer or
  FIT-400 – Heat/Chemical Resistant FEP Teflon®

Toll Free 1-800-526-5376 • 201-337-1000 • Fax 201-337-1862

XTRA•GUARD® 2

Industrial Strength, Extra-Rugged Polyurethane Jacket

Recognized Component Underwriters Laboratories Inc. Certified Canadian Standards Association Passes UL VW-1 Flame Test Underwriters Laboratories Inc.

SPECIFY AND CHOOSE XTRA•GUARD® 2 FOR:

- Unmatched Resistance to Oils, Fuels, Solvents and Water
- Twice the Tensile Strength of PVC
- Three-times the Tear and Abrasion Resistance of PVC
- Applications Requiring Ultraviolet Light Stability and Fungus Resistance
- Superior Low-temperature Operation to –20°C
- Fully Color-coded PVC Insulated Tinned Copper Conductors With a Specially Formulated Extra-rugged Polyurethane Jacket
- Jacket Colors: Yellow, Orange, Blue, Green, Red, Black, White and Gray
- UL Recognition and CSA Certification
- Available in Both 300 Volt and 600 Volt Cable Styles

XTRA•GUARD® 2 APPLICATIONS:

- CNC Machine Centers
- Fixed Automotive Assembly Equipment
- Military Ground Support Systems
- Packaging Machinery
- Petrochemical Plant Operations
- Geophysical Exploration Equipment

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-321** – Adhesive-lined Polyolefin

XTRA•GUARD® 3

Extra-Durable Outdoor Direct-Burial Jacket

Suitable for Direct Burial

SPECIFY AND CHOOSE XTRA•GUARD® 3 FOR:

- Direct Burial Applications in Wet Earth Without the Costly Use of Conduit
- Five-times the Water Resistance of Conventional PVC
- A Specially Formulated Ethylene Propylene Copolymer Jacket for Outstanding Service Life in Outdoor Use
- Unmatched Ultraviolet Light Stability
- Available in Both 300 Volt and 600 Volt Cable Styles
- Jacket Color: Black

XTRA•GUARD® 3 APPLICATIONS:

- Inter-building Communications
- Satellite Communications Equipment
- Land Irrigation Systems
- Outdoor Security Systems
- Outdoor Scoreboards and Displays
- Pipeline Sensor Controls

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-321** – Adhesive-lined Polyolefin

XTRA•GUARD® 5

Extra High-Temperature/ Chemical-Resistant FEP Teflon® Jacket

UL LISTED Certified Canadian Standards Association Pennsylvania Bureau of Deep Mine Safety Approved P-MWMS-1-85

SPECIFY AND CHOOSE XTRA•GUARD® 5 FOR:

- FEP Teflon® Cables for Unmatched Performance at Temperatures from –80°C to +200°C
- 100% Impervious to All Chemicals, Acids, Fuels, Solvents and Water
- 20-30% Smaller Cable Diameter than Conventional Cables
- Extremely Low Friction Jacket for Ease of Cable Routing
- Excellent Ampacity Rating
- Low Dielectric Constant of 2.1
- Plenum-rated Applications
- Pennsylvania Bureau Deep Mine Safety Approved (P-MWMS-1-85) for Mine-wide Monitoring Systems
- Jacket Color: Tan
- UL Recognition and CSA Certification
- Available in 300 Volt Cable Styles

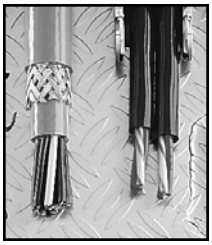
XTRA•GUARD® 5 APPLICATIONS:

- Military Electronic Applications
- Steel, Glass and Metal Foundries
- Mining Instruments and Controls
- Food and Beverage Plants
- Clean Room Environments
- Refinery Cracker Unit Controls

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-650** – High/Low Temperature Viton or **FIT-400** – FEP Teflon®

Teflon is a registered trademark of E.I. Dupont Co.



XTRA•GUARD® Flexible Cables

THE AVAILABLE ALTERNATIVE℠

Recognized Component Underwriters Laboratories Inc. Certified Canadian Standards Association

SPECIFY AND CHOOSE XTRA•GUARD® MULTI-PURPOSE FLEXIBLE CABLES FOR:

- General Purpose Electronic Cables where Flexibility is Required, Providing Three-times the Flexibility of Ordinary PVC Cable
- Outstanding Oil and Chemical Resistant Jacket That Meets the Stringent Requirements of the VDE 0472, Section 803 Oil Test
- Black Numbered Conductors and Standard Green/Yellow Ground Conductor on the Outer Layer

SPECIFY AND CHOOSE XTRA•GUARD® CONTINUOUS USE FLEXIBLE CABLES FOR:

- Unmatched Flexibility and Durability in Continuous Motion Cable Track Applications
- Twice the Flexibility of Ordinary PVC Cable
- Super-flexible Cables Which Have Been Tested to MIL-C-13777G for Flex Life
- For Prolonged Use in Heavy-duty, High Speed Cable Track Applications
- Red Numbered Conductors and Standard Green/Yellow Ground Conductor on the Outer Layer
- Stocked in 600 Volt Shielded and Unshielded Constructions

XTRA•GUARD® FLEXIBLE CABLE APPLICATIONS:

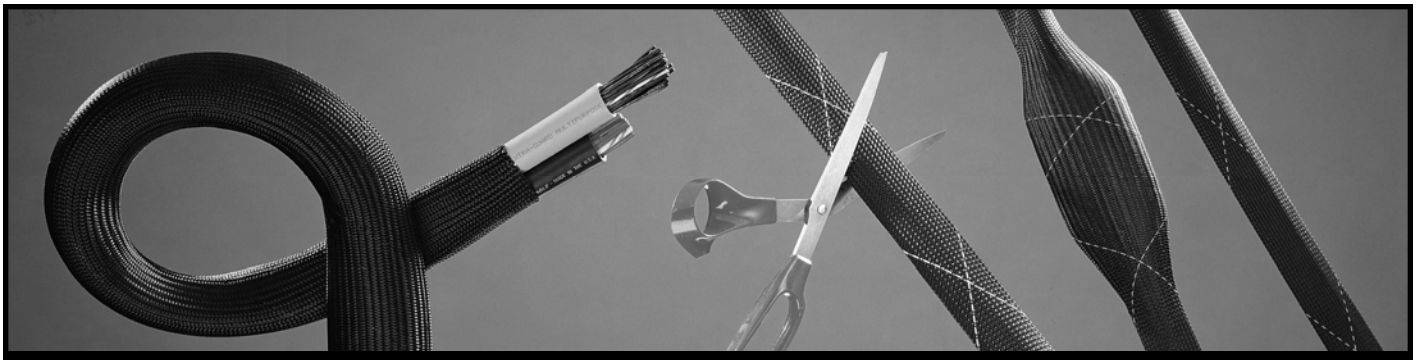
- Machine Tools
- Machine Rebuilding
- Robotics
- Automation Equipment
- Material Handling Equipment

Alpha's FIT® Shrinkable Tubing Recommendation:

- **FIT-FLEX** – Highly Flexible Silicone Rubber

DUAL WALL / ADHESIVE LINED

	Features & Benefits	Applications	Characteristics
FIT®-300 **Surface Irradiated/Dual Extruded Polyolefin** MIL-I-23053/4C, Class 1	• Meltable inner wall • Encapulates without adhesive • Temporary sealing without sticky residue • Increased wall thickness for added protection • High shrink ratios • Excellent dielectric properties	• Substrates requiring filled interstices • Digital electronics where adhesive is unacceptable • Temporary applications requiring encapsulation	• Shrink Ratio: 3:1 - 6:1 (depending on size) @ 135°C • Temperature: –55°C to +110°C • Longitudinal Shrinkage: 10% • Size: 1/8" – 3/4" • Packages: 4ft lengths, cut pieces • Colors: Multiple
FIT®-700 **Non-Bonding, Mastic Lined, Irradiated Polyolefin**	• Non-bonding adhesion to most materials • Environmental & water-tight seal • Prevents wicking & fills interstices • Tubing sizes match 14AWG-2000MCM sizes • Superior strength • High voltage & dielectric strength • Pre-cut 12 inch pieces	• High voltage splices • Waterproofing connections • Underground utility applications • Direct burial • Outdoor insulation & protection • **XTRA•GUARD® 3** applications	• Shrink Ratio: 3:1 @ 121°C • Temperature: –55°C to +90°C • Longitudinal Shrinkage: 5% • Size: 3/4" – 4-1/2 in (14AWG-2000MCM) • Packages: 12 inch cut pieces • Colors: Black
FIT®-750 **Permanent Bonding Adhesive Lined, Irradiated Polyolefin** MIL-I-23053/4C, Class 2	• Permanent bonding to substrates • **FIT-221** with adhesive liner • Total encapsulation • Reduced diameters • Permanent waterproof & corrosion protection • Internal isolation of individual substrates – "pinching"	• Waterproofing substrates • Permanent sealing of substrates • Wire isolation within a harness • Permanent joint splice repair • General purpose usage with adhesive • **XTRA•GUARD® 2** applications	• Shrink Ratio: 2:1 @ 121°C • Temperature: –55°C to +110°C • Longitudinal Shrinkage: 5% • Size: 1/4" – 1-1/2 in • Packages: 4ft lengths • Colors: Black



SPECIALTY MATERIALS (NON SHRINK)

	Features & Benefits	Applications	Characteristics
GRP-110 & 120 SLEEVING **Expandable, Braided Polyester Sleeving** MIL-I-631D Recognized Component; Passes UL VW-1 Flame Test	• Lightweight, flexible routing • Flexibility in wide temperature range, – 70°C to +125°C • Abrasion & cut-through resistance • Expansion & contraction of sleeving diameter • Flame retardancy (GRP-120)	• Protective covering for wire, cable & tubing • Robots & automation equipment dressing • Wire bundling & harnessing • **XTRA•GUARD® Flexible Cable** applications • Fiber optic cable bundles • Note: Hot knife must be used to prevent tubing from fraying	• Temperature: –70°C to +125°C • Size: 1/8" – 2 in • Packages: Spools • Colors: Black, White (GRP-120 has a white tracer)
GRP-110NF & 120NF SLEEVING **Non-Fraying Expandable, Braid Sleeving** MIL-I-631D Recognized Component; Passes UL VW-1 Flame Test	• **FRAYLESS CUTS WITHOUT A HOT KNIFE!** • Frequent expansion at scissor cut ends without fraying • Lightweight, flexible routing • Flexibility in wide temperature range, –70°C to +125°C • Abrasion & cut-through resistance • Expansion & contraction of sleeving diameter • Flame retardancy (GRP-120NF)	• Field installation without a hot knife • Protective covering for wire, cable & tubing • Robots & automation equipment dressing • Wire bundling & harnessing • **XTRA•GUARD® Flexible Cable** applications • Fiber optic cable bundles	• Temperature: –70°C to +125°C • Size: 1/8" – 1-1/2 in • Packages: Spools • Colors: Black (GRP-120NF has a white tracer)

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SPECIALTY MATERIALS

	Features & Benefits	Applications	Characteristics
FIT®-105 **Irradiated PVC** MIL-I-23053/2C, Class 1 CSA OFT Flame Test	• Low shrink temperature (100°C) • 30% stronger than standard polyolefin • UL VW-1 & CSA OFT flame retardancy • Low water absorption & UV resistant • Extended shelf life • Multiple package availability	• Use with PVC cable • With heat sensitive substrates • Fast recovery time • Wire harnesses & cable assemblies • Flame retardant requirements • **XTRA•**GUARD® **1** applications • Automated cutting machines (spools)	• Shrink Ratio: 2:1 @ 100°C • Temperature: –35°C to +105°C • Longitudinal Shrinkage: 10% • Size: 3/64" – 2 in • Packages: 4ft lengths, spools & cut pieces • Colors: Black
FIT®-350 **Extra Strong, Flame Retardant Kynar**** MIL-I-23053/8B CSA OFT Flame Test	• Chemical resistance • Almost 3 times the tensile strength of standard polyolefin • Excellent flame retardancy • Excellent heat resistance • Reduced shrink temperature	• High temperature environments • Faster recovery time than Teflon* • Exposure to chemicals • Use with high temperature wire • Caustic environments • **XTRA•**GUARD® **4** applications	• Shrink Ratio: 2:1 @ 175°C • Temperature: –55°C to +175°C • Longitudinal Shrinkage: 10% • Size: 3/64" – 1 in • Packages: 4ft lengths & cut pieces • Colors: Transparent
FIT®-400 **Temperature/Chemical Resistant FEP Teflon*** MIL-I-23053/11B	• Excellent chemical resistance • Extreme temperature range of –67°C to +204°C • More than twice the strength of standard polyolefin • Unmatched dielectric properties • Thinnest wall thickness available • Lower recovery temp than TFE Teflon*	• Fiber optic applications • High temperature cable • Limited space applications • **XTRA•**GUARD® **4 & 5** applications • Digital electronics (signal sensitive equip.) • Extremely caustic environments • Fast recovery time • Data & FEP Teflon* cable applications	• Shrink Ratio: 1.2:1 @ 176°C • Temperature: –67°C to +204°C • Longitudinal Shrinkage: 10% • Size: 0.03" – 0.44" (24AWG-0AWG) • Packages: 4ft lengths & 2ft lengths • Colors: Naturally Clear
FIT®-500 **Temperature/Chemical Resistant TFE Teflon*** MIL-I-23053/12B, Class 3	• Supreme chemical resistance • Most extreme temperature range of –67°C to +260°C • Among the highest tensile strength available (6000psi) • Unmatched dielectric properties • Extremely thin wall thickness • Low friction coefficient	• Fiber optic applications • TFE Teflon* cable applications • Limited space applications • Digital electronics (signal sensitive equip.) • Extremely caustic environments	• Shrink Ratio: 1.5:1 @ 327°C • Temperature: –65°C to +260°C • Longitudinal Shrinkage: 10% • Size: 0.034" – 0.047" (30AWG-0AWG) • Packages: 2ft lengths • Colors: Naturally Transparent
FIT®-600 **Highly Flexible, Irradiated Elastomer** MIL-I-23053/1B, Class 2† MIL-R-46846 Type 1, Class 1† CSA OFT Flame Test	• Improved flexibility • Twice the tensile strength of silicone rubber • Reduced longitudinal shrinkage • Large tubing diameters • Oil resistance & flame retardancy • Abrasion resistance	• Military & commercial harnesses • Moderate flexing at mild temperatures • Cold temperature flexing • Expansion & contraction compensation • Machine tool & automation equipment • **XTRA•**GUARD® **4** applications • **XTRA•**GUARD® **Flexible Cable** applications	• Shrink Ratio: 1.75:1 @ 135°C • Temperature: –70°C / +121°C • Longitudinal Shrinkage: 6% • Size: 1/4" – 3in • Packages: Spools • Colors: Black
FIT®-650 **Chemical and Temperature Resistant Viton** MIL-I-23053/13A	• Extreme temperatures –40°C to +200°C • Excellent chemical resistance (water, oil, acid & fuels) • Immersion in fluids or chemicals • Flexibility	• Chemical production applications • Military electronics/aircraft • In hostile environments requiring some flexibility • **XTRA•**GUARD® **5** applications • **XTRA•**GUARD® **Flexible Cable** applications	• Shrink Ratio: 2:1 @ 175°C • Temperature: –40°C to +200°C • Longitudinal Shrinkage: 20% • Size: 1/8" – 1 in • Packages: Spools • Colors: Black
FIT® FLEX **Highly Flexible, Irradiated Silicone Rubber** ASTM-D 2240 & 2671	• Highest flexibility available • Flexibility in widest temperature range, –75°C to +200°C • Expansion & contraction compensation • Scrape abrasion resistance • Pliability when substrate requires "give" • Flame retardancy	• Robotics cables • Automation equipment dressing • Environments with varied temperatures • **XTRA•**GUARD® **Flexible Cable** applications • Fiber optic cable bundles • Assemblies & harnesses requiring flexibility	• Shrink Ratio: 1.7:1 @ 135°C • Temperature: –75°C to +200°C • Longitudinal Shrinkage: 15% • Size: 0.112" – 1.217" • Packages: Spools • Colors: Gray

*Teflon® is a registered trademark of E.I. DuPont Co.
**Kynar is a trademark of T.M. Pennwalt

†FIT-600 does not contain any polychloroprene/neoprene but meets the physical properties of MIL-I-23053/1B, Class 2 and MIL-R-46846 Type 1, Class 1 specifications.

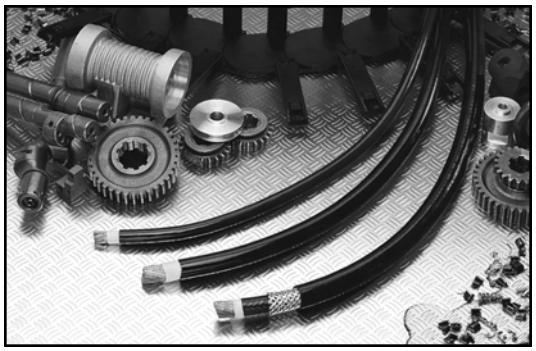
XTRA•GUARD®

MULTICONDUCTOR, SHIELDED/UNSHIELDED

CONTINUOUS USE, SUPER-FLEXIBLE, HEAVY DUTY CONTROL CABLE

UL AWM STYLE 2587
CSA AWM I A/B II A/B FT1
600 VOLT

22 WIRES LINE CORDS & ACC



20 AWG (0,50mm), **63/68** (63/0,10mm), Insulation Thickness: **0.022"** (0,56mm)

Alpha Part No.	No. of Cond.	Jacket Thickness Inches	mm	Nominal Diameter Inches	mm
85003	**3**	0.045	1,14	0.32	8,1
85003CY*	**3**	0.055	1,34	0.48	12,2
85004	**4**	0.045	1,14	0.34	8,6
85004CY*	**4**	0.055	1,34	0.51	13,0
85005	**5**	0.045	1,14	0.37	9,4
85005CY*	**5**	0.055	1,34	0.55	14,0
85007	**7**	0.055	1,34	0.42	10,7
85007CY*	**7**	0.055	1,34	0.58	14,7
85010CY*	**10**	0.065	1,65	0.71	18,0
85012	**12**	0.055	1,34	0.54	13,7
85012CY*	**12**	0.065	1,65	0.72	18,3
85018	**18**	0.065	1,65	0.64	16,3
85018CY*	**18**	0.065	1,65	0.80	20,3
85025	**25**	0.065	1,65	0.77	19,6
85025CY*	**25**	0.075	1,91	0.96	24,4
85034	**34**	0.075	1,91	0.87	22,1

CHOOSE XTRA•GUARD CONTINUOUS USE SUPER-FLEXIBLE CABLES FOR:

- Two Times the Flexibility of Ordinary PVC Cable
- Extra Flexibility and Durability for Continuous Motion
- Extended Cycle Life
- Outstanding Oil and Chemical Resistance
- UL Recognized **and** CSA Certified
- Jacket Meets VDE 0472, Section 803 Oil Test

XTRA•GUARD CONTINUOUS USE SUPER-FLEXIBLE CABLE APPLICATIONS:

- Applications Requiring Continuous Flexing
- Installation of Cable Track
- Assembly Lines
- Robotics
- Automation Equipment
- Material Handling Equipment

18 AWG (1,00mm), **105/38** (105/0,10mm), Insulation Thickness: **0.022"** (0,56mm)

Alpha Part No.	No. of Cond.	Jacket Thickness Inches	mm	Nominal Diameter Inches	mm
85803	**3**	0.045	1,14	0.34	8,6
85803CY*	**3**	0.055	1,34	0.50	12,7
85804	**4**	0.045	1,14	0.36	9,1
85804CY*	**4**	0.055	1,34	0.54	13,7
85805	**5**	0.055	1,34	0.41	10,4
85805CY*	**5**	0.055	1,34	0.57	14,5
85807	**7**	0.055	1,34	0.45	11,4
85807CY*	**7**	0.055	1,34	0.61	15,5
85812	**12**	0.055	1,34	0.58	14,7
85812CY*	**12**	0.065	1,65	0.76	19,3
85815	**15**	0.065	1,65	0.67	17,0
85818	**18**	0.065	1,65	0.69	17,5
85818CY*	**18**	0.075	1,91	0.88	22,4
85825	**25**	0.075	1,91	0.87	22,1
85825CY*	**25**	0.075	1,91	1.04	26,4
85834	**34**	0.075	1,91	0.93	23,6

CHARACTERISTICS

OPERATING TEMPERATURE:
- –5°C to 90°C

VOLTAGE RATING:
- 600 Volt

COLOR DESCRIPTION:
- Color Code: Numerically Numbered Red Conductors With One Green/Yellow Conductor on Outside Layer
- Jacket Color: Black

PRODUCT DESCRIPTION:
- Conductor: Super Finely Stranded Bare Copper
- Insulation: Talc Coated, PVC
- Fillers: Non-wicking, Solid PVC Rod
- Wrap: Non-wicking Fabric
- Inner Jacket: PVC
- Shield: Tinned Copper Braid (85% Coverage)
- Outer Jacket: Oil Resistant PVC

16 AWG (1,50mm), **163/38** (163/0,10mm), Insulation Thickness: **0.022"** (0,56mm)

Alpha Part No.	No. of Cond.	Jacket Thickness Inches	mm	Nominal Diameter Inches	mm
85603	**3**	0.045	1,14	0.38	9,7
85603CY*	**3**	0.055	1,34	0.56	14,2
85604	**4**	0.055	1,34	0.43	10,9
85604CY*	**4**	0.055	1,34	0.59	15,0
85605	**5**	0.055	1,34	0.47	11,9
85605CY*	**5**	0.065	1,65	0.65	16,5
85607	**7**	0.055	1,34	0.51	13,0
85607CY*	**7**	0.065	1,65	0.69	17,5
85612	**12**	0.065	1,65	0.67	17,0
85612CY*	**12**	0.065	1,65	0.83	21,1
85618	**18**	0.065	1,65	0.78	19,8
85618CY*	**18**	0.075	1,91	0.97	24,6
85625	**25**	0.075	1,91	0.96	24,4
85625CY*	**25**	0.085	2,16	1.15	29,2
85634	**34**	0.085	2,16	1.08	27,4

SPECIFICATIONS

- Bend Radius: 10X Cable Diameter
- CSA AWM I A/B II A/B FT1
- UL AWM Style 2587
- Jacket Meets VDE 0472, Section 803 Oil Test
- Passes MIL-C-13777G Flexlife Test
- Cycle Life Testing Ongoing, Contact Tech Service for Status

Recognized Component — Underwriters Laboratories Inc.
Certified — Canadian Standards Association

14 AWG (2,50mm), **266/38** (266/0,10mm), Insulation Thickness: **0.022"** (0,56mm)

Alpha Part No.	No. of Cond.	Jacket Thickness Inches	mm	Nominal Diameter Inches	mm
85404	**4**	0.055	1,34	0.46	11,7
85404CY*	**4**	0.055	1,34	0.64	16,3
85407	**7**	0.055	1,34	0.55	14,0
85407CY*	**7**	0.055	1,34	0.73	18,5

***Designates shielded**

AVAILABILITY

- **In Stock:** 100 ft (30,5m), 500 ft (152m) and 1000 ft (305m) put-ups

Toll Free 1-800-526-5376 • 201-337-1000 • Fax 201-337-1862

FIT® SHRINKABLE TUBING

IRRADIATED POLYOLEFIN FIT®-221

MIL-I-23053/5B, UL STANDARD 224
CSA STANDARD 198

CHOOSE FIT-221 FOR:

- Flexibility
- Excellent Flame Retardancy
- Military, UL/CSA Requirements

FIT-221 APPLICATIONS:

- Wire Harnesses
- Cable/Connector Protection
- Insulation of Terminals
- Wire Splices

CHARACTERISTICS

OPERATING TEMPERATURE:

- –55°C to 135°C

SHRINKAGE RATIO:

- Approximately 2 to 1 at 121°C

COLOR DESCRIPTION:

- 4-Foot Lengths:
  3/64 to 2 Inch – Black, White, Clear, Red, Yellow, Blue, Green
  3 and 4 Inch – Black, Clear
- 6-Inch Lengths:
  3/64 to 1 Inch – Black, White, Clear, Red, Yellow, Blue, Green
  1-1/2 to 3 Inch – Black, Clear
- 1/2 or 1 Inch Cut Pieces: Black
- Spools: See Color Availability Chart Below

PHYSICAL PROPERTIES:

- Tensile Strength: 1800 psi, (127 kg/cm^2)
- Ultimate Elongation: 400%
- Longitudinal Shrinkage: ±5%
- Specific Gravity: 1.35
- Secant Modulus: 2.5 x 10^4 max.
- Flammability: Self-Extinguishing

CHEMICAL PROPERTIES:

- Corrosive Effect: Passes Copper Stability Test
- Fungus Resistance: No Growth

ELECTRICAL PROPERTIES:

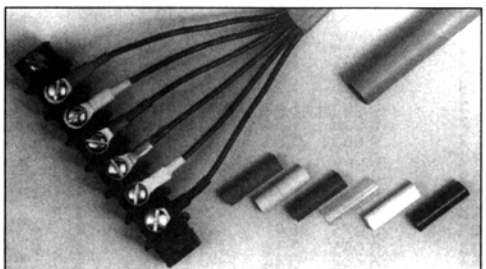
- Dielectric Strength: 500V/mil (197 kV/cm)
- Volume Resistivity: 10^{14} ohm-cm

SPECIFICATIONS

- MIL-I-23053/5B
- UL Standard 224 (except for Clear)
- CSA Standard 198 (except for Clear)

Recognized Component Underwriters Laboratories Inc. Certified Canadian Standards Association

Standard Packages Alpha Part No. And Size	Minimum Supplied I.D. Inches	mm	Maximum Recovered I.D. Inches	mm	Nom. Recovered Wall Thickness Inches	mm	4 Ft. Lengths Total Ftg.	Spools Tot. Ftg.	Spools Tot. Ftg.	Spools Tot. Ftg.	No. Cut Pieces 6 Inch	No. Cut Pieces 1/2" or 1"
FIT-221-3/64	0.046	1,17	0.023	0,58	0.016	0,41	100	1000			40	1000
FIT-221-1/16	0.063	1,60	0.031	0,78	0.017	0,43	100	1000	100	70	36	1000
FIT-221-3/32	0.093	2,36	0.046	1,17	0.020	0,50	100	500	100	65	32	1000
FIT-221-1/8	0.125	3,18	0.062	1,58	0.020	0,50	100	500	100	60	28	1000
FIT-221-3/16	0.187	4,75	0.093	2,36	0.020	0,50	100	500	100	50	24	1000
FIT-221-1/4	0.250	6,35	0.125	3,18	0.025	0,63	100	250	100	40	20	1000
FIT-221-3/8	0.375	9,53	0.187	4,75	0.025	0,63	100	200	50	35	16	1000
FIT-221-1/2	0.500	12,70	0.250	6,35	0.025	0,63	20	150	50	32	14	–
FIT-221-3/4	0.750	19,10	0.375	9,53	0.030	0,76	20	250	50	24	12	–
FIT-221-1	1.000	25,40	0.500	12,70	0.035	0,88	20	250	50	16	8	–
FIT-221-1-1/2	1.500	38,10	0.750	19,10	0.040	1,02	20	125	–	–	5	–
FIT-221-2	2.000	50,80	1.000	25,40	0.050	1,27	20	125	–	–	3	–
FIT-221-3	3.000	76,20	1.500	38,10	0.050	1,27	8	100	–	–	2	–
FIT-221-4	4.000	101,60	2.000	50,80	0.055	1,40	8	50	–	–	1	–



Packaged Assortments
Assorted Sizes of 6" Lengths
Each Length – Size Identified – Assorted Colors

Alpha Part No.	Tubing Size Range	Lengths Per Box
FIT-221-MS-1	3/64" – 3/16" (5 Sizes)	6 per Size (30 Lengths)
FIT-221-MS-2	1/4" – 3/4" (4 Sizes)	4 per Size (16 Lengths)

SPOOL COLOR AVAILABILITY CHART

FIT-221 Tubing Size	Put-Up	Colors
3/64"	1000'	Black, Clear
1/16"	1000'	All Colors*
	100'	Black, Clear
3/32"	70'	All Colors
	500'	All Colors
	100'	Black, Clear
	65'	All Colors
1/8"	500'	All Colors
	100'	Black, Clear
	60'	All Colors
3/16"	500'	All Colors
	100'	Black, Clear
	50'	All Colors
1/4"	250'	All Colors
	100'	Black, Clear
	40'	All Colors

FIT-221 Tubing Size	Put-Up	Colors
3/8"	200'	All Colors
	50'	Black, Clear
	35'	All Colors
1/2"	150'	All Colors
	50'	Black, Clear
	32'	All Colors
3/4"	250'	All Colors
	50'	Black, Clear
	24"	All Colors
1"	250"	All Colors
	50"	Black, Clear
	16"	All Colors
1-1/2"	125'	Black, Clear
2"	125'	Black, Clear
3"	100'	Black, Clear
4"	50'	Black, Clear

*All colors include black, white, clear, red, yellow, blue, green

HOOK-UP WIRE
PVC INSULATION

UL 1007/1569, CSA TR-64
80°C/105°C, 300 VOLT

22

WIRES LINE CORDS & ACC

CHARACTERISTICS

OPERATING TEMPERATURE:
- –40°C to 105°C – UL AWM 1569
- –40°C to 90°C – CSA TR-64
- –40°C to 80°C – UL AWM 1007

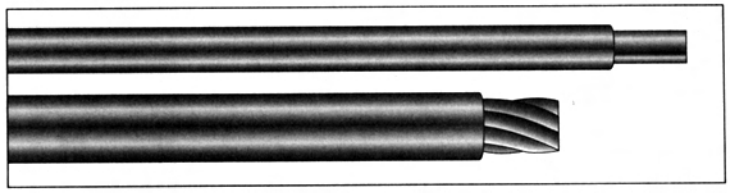
VOLTAGE RATING:
- 300 Volt

PRODUCT DESCRIPTION:
- Conductor: Stranded or Solid Tinned Copper
- Insulation: Color-Coded PVC

SPECIFICATIONS
- UL AWM Styles 1007 and 1569
- CSA TR-64

Recognized Component – Underwriters Laboratories Inc.
Passes UL VW-1 Flame Test – Underwriters Laboratories Inc.
Certified – Canadian Standards Association

AVAILABILITY
- 100 ft (30,5m), 1000 ft (305m) put-ups



Alpha Part No.	Conductor AWG	Strand	Insul. Thickness Inches	mm	Diameter Inches	mm	Stock Colors*
3047	30	7/38	0.016	0,41	0.043	1,09	1–10
3048	28	7/36	0.016	0,41	0.047	1,19	1–10
3049	26	7/34	0.016	0,41	0.051	1,30	1–10
3050	24	7/32	0.016	0,41	0.057	1,45	1–19+28, 30
3051	22	7/30	0.016	0,41	0.065	1,65	1–19+28–30
3053	20	10/30	0.016	0,41	0.071	1,80	1–19+28–30
3055	18	16/30	0.016	0,41	0.080	2,03	1–19+28–30
3057	16	26/30	0.016	0,41	0.095	2,41	1–19+28–30

*See color chart below

SOLID CONDUCTOR

Alpha Part No.	Conductor AWG	Strand	Insul. Thickness Inches	mm	Diameter Inches	mm	Stock Colors*
3050/1	24	Solid	0.016	0,41	0.057	1,45	1–10
3051/1	22	Solid	0.016	0,41	0.065	1,65	1–10
3053/1	20	Solid	0.016	0,41	0.071	1,80	1–10
3055/1	18	Solid	0.016	0,41	0.080	2,03	1–10
3057/1	16	Solid	0.016	0,41	0.095	2,41	1–10

*See color chart below

SEMI RIGID PVC INSULATION

UL 1061, CSA AWM I A/B FT1
80°C, 300 VOLT

CHARACTERISTICS

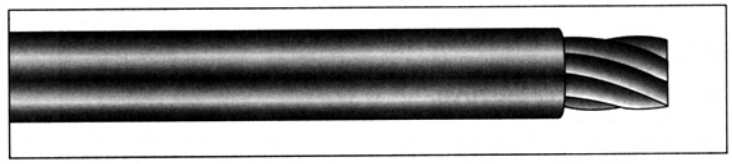
OPERATING TEMPERATURE:
- –10°C to 80°C

VOLTAGE RATING:
- 300 Volt

PRODUCT DESCRIPTION:
- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded, Semi Rigid PVC

SPECIFICATIONS
- UL AWM Style 1061
- CSA AWM I A/B FT1

Recognized Component – Underwriters Laboratories Inc.
Passes UL VW-1 Flame Test – Underwriters Laboratories Inc.
Certified – Canadian Standards Association



Alpha Part No.	Conductor AWG	Strand	Insul. Thickness Inches	mm	Diameter Inches	mm	Stock Colors*
3250	24	7/32	0.009	0,23	0.042	1,07	1–10
3251	22	7/30	0.009	0,23	0.048	1,22	1–10
3252	20	7/28	0.009	0,23	0.056	1,42	1–10
3253	18	7/26	0.009	0,23	0.066	1,68	1–10
3254	16	7/24	0.009	0,23	0.078	1,98	1–10

*See color chart below

AVAILABILITY
- 100 ft (30,5m), 1000 ft (305m) put-ups

***STOCK COLOR CHART**

1–White	3–Red	5–Yellow	7–Brown	9–Gray	11–White/Black	13–White/Green	15–White/Blue	17–White/Orange	19–White/Violet	29–Yellow/Green
2–Black	4–Green	6–Blue	8–Orange	10–Violet (purple)	12–White/Red	14–White/Yellow	16–White/Brown	18–White/Gray	28–Green/Yellow	30–Pink

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HOOK-UP WIRE

MIL-W-16878E TYPE B
105°C, 600 VOLT

PVC INSULATION

CHARACTERISTICS

OPERATING TEMPERATURE:
- –55°C to 105°C

VOLTAGE RATING:
- 0 Volt

PRODUCT DESCRIPTION:
- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded PVC 60

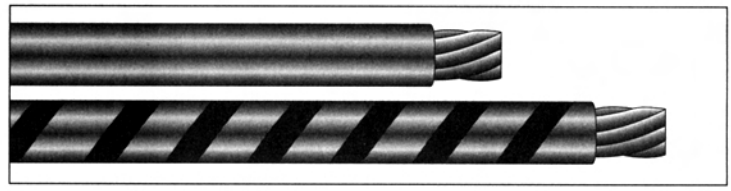
SPECIFICATIONS

- MIL-W-16878E Type B

Passes VW-1 Flame Test

AVAILABILITY

- 100 ft (30,5m), 1000 ft (305m) put-ups



Alpha Part No.	Type Designation	Conductor AWG	Conductor Strand	Insul. Thickness Inches	Insul. Thickness mm	Diameter Inches	Diameter mm	Stock Colors*
1850	B-32	32	7/40	0.010	0,25	0.028	0,71	1–6
1851†	B-30	30	7/38	0.010	0,25	0.032	0,81	1–6
1852†	B-28	28	7/36	0.010	0,25	0.034	0,86	1–10
1853†	B-26	26	7/34	0.010	0,25	0.038	0,96	1–19
1854†	B-24	24	7/32	0.010	0,25	0.043	1,09	1–19
1854/19	B-24	24	19/36	0.010	0,25	0.043	1,09	1–19
1855†	B-22	22	7/30	0.010	0,25	0.050	1,27	1–19
1855/19	B-22	22	19/34	0.010	0,25	0.050	1,27	1–19
1856†	B-20	20	7/28	0.010	0,25	0.058	1,47	1–19
1856/19	B-20	20	19/32	0.010	0,25	0.058	1,47	1–19
1857	B-18	18	7/26	0.010	0,25	0.068	1,73	1–19
1857/19	B-18	18	19/30	0.010	0,25	0.068	1,73	1–19
1858/19	B-16	16	19/29	0.010	0,25	0.077	1,96	1–19
1859/19	B-14	14	19/27	0.010	0,25	0.091	2,31	1–10

† Also meets MIL-W-76B Type LW
*See color chart below

UL 1015, CSA TEW-105
105°C, 600 VOLT

PVC INSULATION

CHARACTERISTICS

OPERATING TEMPERATURE:
- –20°C to 105°C

VOLTAGE RATING:
- 600 Volt

PRODUCT DESCRIPTION:
- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded PVC

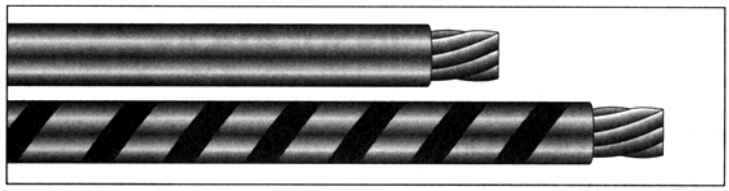
SPECIFICATIONS

- UL AWM Style 1015
- CSA TEW-105

Recognized Component — Underwriters Laboratories Inc.
Passes UL VW-1 Flame Test — Underwriters Laboratories Inc.
Certified — Canadian Standards Association

AVAILABILITY

- 100 ft (30,5m), 1000 ft (305m) put-ups



Alpha Part No.	Conductor AWG	Conductor Strand	Insul. Thickness Inches	Insul. Thickness mm	Diameter Inches	Diameter mm	Stock Colors*
3070	24	7/32	0.032	0,81	0.088	2,24	1–10+28
3071	22	7/30	0.032	0,81	0.094	2,38	1–10+28,29
3073	20	10/30	0.032	0,81	0.100	2,54	1–10+28
3075	18	16/30	0.032	0,81	0.112	2,85	1–10+28,29
3077	16	26/30	0.032	0,81	0.124	3,14	1–10+28,29
3079	14	41/30	0.032	0,81	0.134	3,61	1–10+28,29
3080	12	65/30	0.032	0,81	0.162	3,93	1–4
3081	10	105/30	0.032	0,81	0.180	4,83	1–4

*See color chart below

***STOCK COLOR CHART**

1–White	3–Red	5–Yellow	7–Brown	9–Gray	11–White/Black	13–White/Green	15–White/Blue	17–White/Orange	19–White/Violet	29–Yellow/Green
2–Black	4–Green	6–Blue	8–Orange	10–Violet (purple)	12–White/Red	14–White/Yellow	16–White/Brown	18–White/Gray	28–Green/Yellow	30–Pink

HOOK-UP WIRE
HOOK-UP WIRE KITS

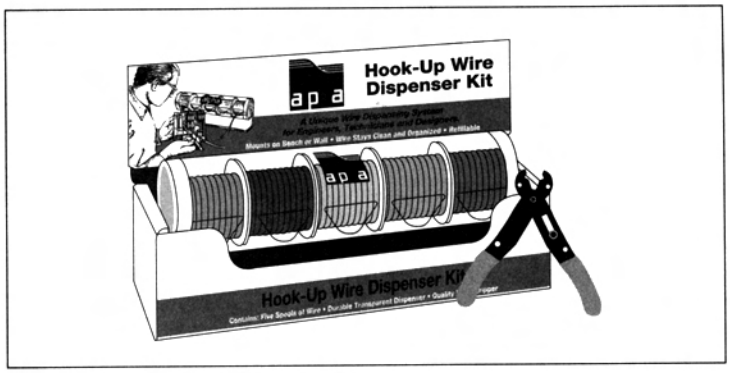
UL 1007/1569
CSA TR-64
MIL-W-76B, TYPE MW

22

Hook-Up Wire Kits

Alpha's Hook-Up Wire Kits contain an assortment of 100 ft (30,5m) spools of hook-up wire suitable for military or UL/CSA applications. These kits have been designed for use by technicians, engineers and designers in the R & D lab or maintenance shop.

Each kit contains five spools of hook-up wire in a unique, rack-mounted, transparent dispensing tube. The tube and rack system keeps hook-up wire neat, clean and conveniently at hand.



Choose Hook-Up Wire Kits For:

- Convenient, Wire Dispensing System
- Five Assorted Hook-Up Wire Colors
- Includes Cut and Strip Tool
- Uses Standard Alpha Hook-Up Wire
- Spools When Refills Are Required

Characteristics

OPERATING TEMPERATURE:

- –40°C to 80°C (HU-KIT-10, 30)
- –40°C to 105°C (HU-KIT-20, 40)

VOLTAGE RATING:

- 1000 Volt (HU-KIT-10, 30)
- 300 Volt (HU-KIT-20, 40)

PRODUCT DESCRIPTION:

- Conductor:
  Stranded Tinned Copper
- Insulation:
  Color-Coded PVC
- AWG Size:
  22 AWG (HU-KIT-10, 20)
  24 AWG (HU-KIT-30, 40)

Specifications

- UL AWM Styles 1007 and 1569
- CSA TR-64
- MIL-W-76B, Type MW

Recognized Component — Underwriters Laboratories Inc.
Passes UL VW-1 Flame Test — Underwriters Laboratories Inc.
Certified — Canadian Standards Association

Alpha Part No.	Contents	Quantity Ft.	Quantity m	Reorder No.
HU-KIT-10 (22 AWG)	MIL-W-76B Type MW / White	100	30,5	1551
	MIL-W-76B Type MW / Black	100	30,5	1551
	MIL-W-76B Type MW / Red	100	30,5	1551
	MIL-W-76B Type MW / Green	100	30,5	1551
	MIL-W-76B Type MW / Blue	100	30,5	1551
	Cut and Strip Tool			

Alpha Part No.	Contents	Quantity Ft.	Quantity m	Reorder No.
HU-KIT-20 (22 AWG)	UL 1007/1569, CSA TR-64 / White	100	30,5	3051
	UL 1007/1569, CSA TR-64 / Black	100	30,5	3051
	UL 1007/1569, CSA TR-64 / Red	100	30,5	3051
	UL 1007/1569, CSA TR-64 / Green	100	30,5	3051
	UL 1007/1569, CSA TR-64 / Blue	100	30,5	3051
	Cut and Strip Tool			

Alpha Part No.	Contents	Quantity Ft.	Quantity m	Reorder No.
HU-KIT-30 (24 AWG)	MIL-W-76B Type MW / White	100	30,5	1550
	MIL-W-76B Type MW / Black	100	30,5	1550
	MIL-W-76B Type MW / Red	100	30,5	1550
	MIL-W-76B Type MW / Green	100	30,5	1550
	MIL-W-76B Type MW / Blue	100	30,5	1550
	Cut and Strip Tool			

Alpha Part No.	Contents	Quantity Ft.	Quantity m	Reorder No.
HU-KIT-40 (24 AWG)	UL 1007/1569, CSA TR-64 / White	100	30,5	3050
	UL 1007/1569, CSA TR-64 / Black	100	30,5	3050
	UL 1007/1569, CSA TR-64 / Red	100	30,5	3050
	UL 1007/1569, CSA TR-64 / Green	100	30,5	3050
	UL 1007/1569, CSA TR-64 / Blue	100	30,5	3050
	Cut and Strip Tool			

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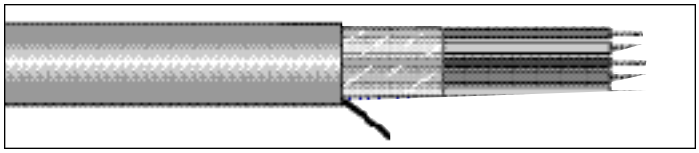
XTRA•GUARD® 1

MULTICONDUCTOR, UNSHIELDED

EXTRA-PREMIUM GRADE PVC JACKET FOR EXTENDED CABLE LIFE

UL TYPE CM, AWM 2464
CSA PCC FT4
300 VOLT



CHOOSE XTRA•GUARD 1 FOR:

- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- UL Recognition **and** UL Listing
- Flexible Cable Routing Requirements

XTRA•GUARD 1 APPLICATIONS:

- High Technology Applications in Controlled Environments
- Medical Electronics
- Computer Peripherals
- Point-Of-Sale Equipment
- Industrial Process Controls

CHARACTERISTICS

OPERATING TEMPERATURE:

- –20°C to 80°C – AWM
- –20°C to 75°C – CM

VOLTAGE RATING:

- 300 Volt

COLOR DESCRIPTION:

- Color Code: 24, 22, 20 AWG
  See Alpha Master Catalog
- Jacket Colors: Gray, Black

PRODUCT DESCRIPTION:

- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded Premium PVC
- Nylon Rip Cord for Ease of Jacket Stripping
- Jacket: Premium PVC

SPECIFICATIONS

- UL Type CM, AWM Style 2464
- CSA PCC FT4
- Passes UL VW-1 Flame Test
- Passes CSA FT4 Flame Test

UL LISTED Passes UL VW-1 Flame Test Underwriters Laboratories Inc. Certified Canadian Standards Association

AVAILABILITY

- **In Stock:** Gray 100 ft (30,5m), 500 ft (152m) and 1000 ft (305m) put-ups
- Made-To-Order: Black, 1000 ft (305m) minimum

▲ Also available in Gray 328 ft (100m)

22 AWG (0,35mm²), **7/30** (7x0,25mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5002C	**2**	0.032	0,81	0.17	4,3
5003C	**3**	0.032	0,81	0.19	4,8
5004C	**4**	0.032	0,81	0.20	5,2
5006C	**6**	0.032	0,81	0.23	5,8
5008C	**8**	0.032	0,81	0.25	6,4
5010C	**10**	0.032	0,81	0.27	6,9
5010/15C	**15**	0.032	0,81	0.31	7,9
5010/20C	**20**	0.032	0,81	0.35	8,8
5010/25C	**25**	0.032	0,81	0.38	9,6
5010/30C	**30**	0.032	0,81	0.41	10,3
5010/40C	**40**	0.032	0,81	0.46	11,6
5010/50C	**50**	0.032	0,81	0.50	12,7
5010/60C	**60**	0.032	0,81	0.55	13,7

20 AWG (0,56mm²), **7/28** (7x0,32mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5052C	**2**	0.032	0,81	0.21	5,3
5053C	**3**	0.032	0,81	0.23	5,9
5054C	**4**	0.032	0,81	0.25	6,5
5056C	**6**	0.032	0,81	0.29	7,4
5058C	**8**	0.032	0,81	0.32	8,2
5060C	**10**	0.032	0,81	0.35	8,8
5060/15C	**15**	0.032	0,81	0.40	10,3
5060/20C	**20**	0.032	0,81	0.45	11,5
5060/25C	**25**	0.032	0,81	0.49	12,6
5060/30C	**30**	0.032	0,81	0.53	13,5
5060/40C	**40**	0.053	1,35	0.64	16,3
5060/50C	**50**	0.053	1,35	0.70	17,8

18 AWG (0,81mm²), **16/30** (16x0,25mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5062C, 5062/1C*	**2**	0.032	0,81	0.23	5,8
5063C, 5063/1C*	**3**	0.032	0,81	0.24	6,1
5064C	**4**	0.032	0,81	0.26	6,6
5066C	**6**	0.032	0,81	0.31	7,9
5068C	**8**	0.032	0,81	0.33	8,4
5070C	**10**	0.032	0,81	0.39	9,8
5070/15C	**15**	0.032	0,81	0.45	11,5
5070/20C	**20**	0.032	0,81	0.51	12,9
5070/25C	**25**	0.032	0,81	0.56	14,1
5070/30C	**30**	0.053	1,35	0.64	16,3
5070/40C	**40**	0.053	1,35	0.72	18,2
5070/50C	**50**	0.053	1,35	0.79	20,0
5070/60C	**60**	0.083	2,11	0.91	23,1

24 AWG (0,23mm²), **7/32** (7x0,20mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5012C	**2**	0.032	0,81	0.16	4,0
5013C	**3**	0.032	0,81	0.17	4,4
▲ **5014C**	**4**	0.032	0,81	0.19	4,7
▲ **5016C**	**6**	0.032	0,81	0.21	5,3
▲ **5018C**	**8**	0.032	0,81	0.23	5,8
▲ **5020C**	**10**	0.032	0,81	0.24	6,2
▲ **5020/15C**	**15**	0.032	0,81	0.28	7,1
5020/20C	**20**	0.032	0,81	0.31	7,9
5020/25C	**25**	0.032	0,81	0.34	8,5
5020/30C	**30**	0.032	0,81	0.36	9,1
5020/40C	**40**	0.032	0,81	0.40	10,2
5020/50C	**50**	0.032	0,81	0.44	11,2

16 AWG (1,23mm²), **19/0.0117** (19x0,29mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5072C,5072/1C*	**2**	0.032	0,81	0.26	6,5
5073C,5073/1C*	**3**	0.032	0,81	0.29	7,4
5074C	**4**	0.032	0,81	0.32	8,1
5076C	**6**	0.032	0,81	0.37	9,3
5078C	**8**	0.032	0,81	0.41	10,4
5080C	**10**	0.032	0,81	0.44	11,3
5080/15C	**15**	0.032	0,81	0.52	13,2
5080/20C	**20**	0.053	1,35	0.63	15,9
5080/25C	**25**	0.053	1,35	0.68	17,3
5080/30C	**30**	0.053	1,35	0.73	18,6
5080/40C	**40**	0.083	2,11	0.88	22,5
5080/50C	**50**	0.083	2,11	0.96	24,5

*Conductors color coded per international standards: brown, blue,

XTRA•GUARD® 1

MULTICONDUCTOR, FOIL SHIELD

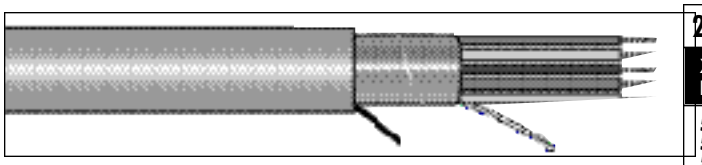
EXTRA-PREMIUM GRADE PVC JACKET FOR EXTENDED CABLE LIFE

UL TYPE CM, AWM 2464
CSA PCC FT4
300 VOLT

22

WIRES

LINE CORDS & ACC



CHOOSE XTRA•GUARD 1 FOR:

- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- UL Recognition **and** UL Listing
- Flexible Cable Routing Requirements

XTRA•GUARD 1 APPLICATIONS:

- EIA RS 232C Interface (24, 22 AWG)
- Point-Of-Sale Equipment
- High Technology Applications in Controlled Environments
- Medical Electronics
- Industrial Process Controls
- Computer Peripherals

CHARACTERISTICS

OPERATING TEMPERATURE:

- –20°C to 80°C – AWM
- –20°C to 75°C – CM

VOLTAGE RATING:

- 300 Volt

COLOR DESCRIPTION:

- Color Code: 24, 22, 20 AWG See Alpha Master Catalog
- Jacket Colors: Gray, Black

PRODUCT DESCRIPTION:

- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded Premium PVC
- Shield: Aluminum/Polyester Foil Facing In with Stranded Tinned Copper Drain Wire Equal in Size to Insulated Conductors of Cable
- Nylon Rip Cord for Ease of Jacket Stripping
- Jacket: Premium PVC

SPECIFICATIONS

- UL Type CM, AWM Style 2464
- Passes UL VW-1 Flame Test
- CSA PCC FT4
- Passes CSA FT4 Flame Test

UL LISTED — Passes UL VW-1 Flame Test — Underwriters Laboratories Inc.
Certified — Canadian Standards Association

AVAILABILITY

- **In Stock:** Gray 100 ft (30,5m), 500 ft (152m) and 1000 ft (305m) put-ups
- Made-To-Order: Black, 1000 ft (305m) minimum
- ▲ Also available in Gray 328 ft (100m)

22 AWG (0,35mm²), **7/30** (7x0,25mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5192C	**2**	0.032	0,81	0.18	4,6
5193C	**3**	0.032	0,81	0.19	4,9
5194C	**4**	0.032	0,81	0.20	5,1
5196C	**6**	0.032	0,81	0.23	5,9
5198C	**8**	0.032	0,81	0.25	6,4
5199/10C	**10**	0.032	0,81	0.28	7,0
5199/15C	**15**	0.032	0,81	0.31	7,9
5199/20C	**20**	0.032	0,81	0.34	8,6
5199/25C	**25**	0.032	0,81	0.38	9,7
5199/30C	**30**	0.032	0,81	0.40	10,2
5199/40C	**40**	0.032	0,81	0.45	11,5
5199/50C	**50**	0.032	0,81	0.49	12,5
5199/60C	**60**	0.032	0,81	0.53	13,5
5199/70C	**70**	0.053	1,35	0.62	14,0

20 AWG (0,56mm²), **7/28** (7x0,32mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5462C	**2**	0.032	0,81	0.21	5,4
5463C	**3**	0.032	0,81	0.22	5,6
5464C	**4**	0.032	0,81	0.24	6,1
5466C	**6**	0.032	0,81	0.28	7,1
5468C	**8**	0.032	0,81	0.31	7,9
5470C	**10**	0.032	0,81	0.35	8,9
5470/15C	**15**	0.032	0,81	0.41	10,4
5470/20C	**20**	0.032	0,81	0.46	11,6
5470/25C	**25**	0.032	0,81	0.50	12,7
5470/30C	**30**	0.032	0,81	0.54	13,6
5470/40C	**40**	0.053	1,35	0.65	16,4
5470/50C	**50**	0.053	1,35	0.71	17,9

18 AWG (0,81mm²), **16/30** (16x0,25mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5382C, 5382/1C*	**2**	0.032	0,81	0.23	5,9
5383C, 5383/1C*	**3**	0.032	0,81	0.24	6,1
5384C	**4**	0.032	0,81	0.26	6,6
5386C	**6**	0.032	0,81	0.31	7,9
5388C	**8**	0.032	0,81	0.33	8,3
5390C	**10**	0.032	0,81	0.39	9,9
5390/15C	**15**	0.032	0,81	0.45	11,5
5390/20C	**20**	0.032	0,81	0.51	13,0
5390/25C	**25**	0.053	1,35	0.56	14,2
5390/30C	**30**	0.053	1,35	0.64	16,4
5390/40C	**40**	0.053	1,35	0.72	18,3
5390/50C	**50**	0.053	1,35	0.79	20,1
5390/60C	**60**	0.083	2,11	0.91	23,2

16 AWG (1,23mm²), **19/0.0117** (19x0,29mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5362C, 5362/1C*	**2**	0.032	0,81	0.25	6,4
5363C, 5363/1C*	**3**	0.032	0,81	0.27	6,9
5364C	**4**	0.032	0,81	0.29	7,4
5366C	**6**	0.032	0,81	0.35	8,9
5368C	**8**	0.032	0,81	0.38	9,7
5370C	**10**	0.032	0,81	0.44	11,2
5370/15C	**15**	0.032	0,81	0.49	12,5
5370/20C	**20**	0.053	1,35	0.59	14,9
5370/25C	**25**	0.053	1,35	0.66	16,8
5370/30C	**30**	0.053	1,35	0.71	18,0
5370/40C	**40**	0.083	2,11	0.89	22,6

*Conductors color coded per international standards: brown, blue, green/yellow

24 AWG (0,23mm²), **7/32** (7x0,20mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
▲ **5092C**	**2**	0.032	0,81	0.16	4,1
▲ **5093C**	**3**	0.032	0,81	0.17	4,3
▲ **5094C**	**4**	0.032	0,81	0.18	4,5
▲ **5096C**	**6**	0.032	0,81	0.20	5,1
▲ **5098C**	**8**	0.032	0,81	0.22	5,6
▲ **5100C**	**10**	0.032	0,81	0.25	6,3
▲ **5100/15C**	**15**	0.032	0,81	0.27	6,9
5100/20C	**20**	0.032	0,81	0.30	7,6
5100/25C	**25**	0.032	0,81	0.33	8,3
5100/30C	**30**	0.032	0,81	0.36	9,2
5100/40C	**40**	0.032	0,81	0.40	10,2
5100/50C	**50**	0.032	0,81	0.44	11,3
5100/60C	**60**	0.032	0,81	0.47	11,9
5100/70C	**70**	0.032	0,81	0.51	12,9

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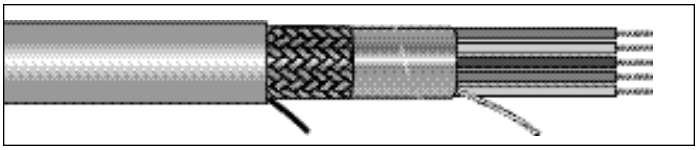
XTRA•GUARD® 1

MULTICONDUCTOR, SUPRASHIELD™

EXTRA-PREMIUM GRADE PVC JACKET FOR EXTENDED CABLE LIFE



UL TYPE CM, AWM 2464
CSA PCC FT4
300 VOLT

CHOOSE XTRA•GUARD 1 FOR:

- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- UL Recognition **and** UL Listing
- **SUPRA**SHIELD – Twice as Effective as Foil Shielding

XTRA•GUARD 1 APPLICATIONS:

- EIA RS 232C Interface (24, 22 AWG)
- High Technology Applications in Controlled Environments
- Point-Of-Sale Equipment
- Computer Peripherals
- Industrial Process Controls
- FCC Docket 20780 Applications

CHARACTERISTICS

OPERATING TEMPERATURE:

- –20°C to 80°C – AWM
- –20°C to 75°C – CM

VOLTAGE RATING:

- 300 Volt

COLOR DESCRIPTION:

- Color Code: 24, 22, 20 AWG
  See Alpha Master Catalog
- Jacket Colors: Gray, Black

PRODUCT DESCRIPTION:

- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded Premium PVC
- **SUPRA**SHIELD: Aluminum/Polyester/Aluminum Foil with Stranded Tinned Copper Drain Wire Equal in Size to Insulated Conductors of Cable plus 70% Overall Braid of Tinned Copper
- Nylon Rip Cord for Ease of Jacket Stripping
- Jacket: Premium PVC

SPECIFICATIONS

- UL Type CM, AWM Style 2464
- CSA PCC FT4
- Passes UL VW-1 Flame Test
- Passes CSA FT4 Flame Test

UL LISTED Passes UL VW-1 Flame Test Underwriters Laboratories Inc. Certified Canadian Standards Association

AVAILABILITY

- **In Stock:** Gray 100 ft (30,5m), 500 ft (152m) and 1000 ft (305m) put-ups
- Made-To-Order: Black, 1000 ft (305m) minimum

24 AWG (0,23mm²), **7/32** (7x0,20mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5112C	2	0.032	0,81	0.18	4,6
5113C	3	0.032	0,81	0.19	4,8
5114C	4	0.032	0,81	0.21	5,4
5116C	6	0.032	0,81	0.23	5,9
5118C	8	0.032	0,81	0.25	6,4
5120C	10	0.032	0,81	0.27	6,9
5120/15C	15	0.032	0,81	0.30	7,6
5120/20C	20	0.032	0,81	0.33	8,4
5120/25C	25	0.032	0,81	0.36	9,2
5120/30C	30	0.032	0,81	0.38	9,7
5120/40C	40	0.032	0,81	0.43	10,9
5120/50C	50	0.032	0,81	0.46	11,7

22 AWG (0,35mm²), **7/30** (7x0,25mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5102C	2	0.032	0,81	0.20	5,0
5103C	3	0.032	0,81	0.21	5,4
5104C	4	0.032	0,81	0.22	5,6
5106C	6	0.032	0,81	0.25	6,4
5108C	8	0.032	0,81	0.27	6,9
5110C	10	0.032	0,81	0.30	7,6
5110/15C	15	0.032	0,81	0.33	8,4
5110/20C	20	0.032	0,81	0.36	9,2
5110/25C	25	0.032	0,81	0.39	9,8
5110/30C	30	0.032	0,81	0.42	10,9
5110/40C	40	0.032	0,81	0.47	11,8
5110/50C	50	0.032	0,81	0.51	12,9
5110/60C	60	0.053	1,35	0.60	15,4
5110/70C	70	0.053	1,35	0.63	16,0

20 AWG (0,56mm²), **7/28** (7x0,32mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5152C	2	0.032	0,81	0.23	5,9
5153C	3	0.032	0,81	0.26	6,6
5154C	4	0.032	0,81	0.28	7,1
5156C	6	0.032	0,81	0.32	8,0
5158C	8	0.032	0,81	0.35	8,8
5160C	10	0.032	0,81	0.37	9,5
5160/15C	15	0.032	0,81	0.43	10,9
5160/20C	20	0.032	0,81	0.48	12,1
5160/25C	25	0.032	0,81	0.52	13,2
5160/30C	30	0.032	0,81	0.56	14,2
5160/40C	40	0.053	1,35	0.67	17,0
5160/50C	50	0.053	1,35	0.73	18,5
5160/60C	60	0.053	1,35	0.78	19,8

18 AWG (0,81mm²), **16/30** (16x0,25mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5162C, 5162/1C*	2	0.032	0,81	0.25	6,5
5163C, 5163/1C*	3	0.032	0,81	0.28	7,2
5164C	4	0.032	0,81	0.31	7,8
5166C	6	0.032	0,81	0.35	8,9
5168C	8	0.032	0,81	0.38	9,7
5170C	10	0.032	0,81	0.41	10,5
5170/15C	15	0.032	0,81	0.48	12,1
5170/20C	20	0.032	0,81	0.53	13,5
5170/25C	25	0.053	1,35	0.62	15,8
5170/30C	30	0.053	1,35	0.67	16,9

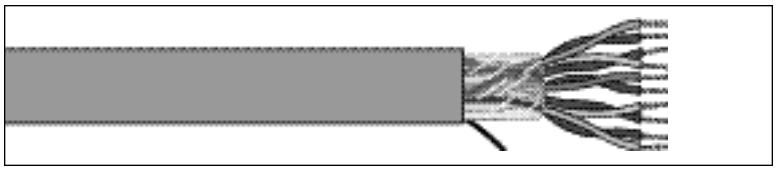
16 AWG (1,23mm²), **19/0.0117** (19x0,29mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Cond.	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5172C, 5172/1C*	2	0.032	0,81	0.28	7,2
5173C, 5173/1C*	3	0.032	0,81	0.32	8,0
5174C	4	0.032	0,81	0.34	8,8
5176C	6	0.032	0,81	0.39	10,0
5178C	8	0.032	0,81	0.43	11,0
5180C	10	0.032	0,81	0.47	11,9
5180/15C	15	0.032	0,81	0.55	13,9
5180/20C	20	0.053	1,35	0.65	16,6
5180/25C	25	0.053	1,35	0.71	18,0

UL TYPE CM, AWM 2464
CSA PCC FT4
300 VOLT

XTRA•GUARD® 1
MULTIPAIR, UNSHIELDED
EXTRA-PREMIUM GRADE PVC JACKET FOR EXTENDED CABLE LIFE

22 WIRES LINE CORDS & ACC



CHOOSE XTRA•GUARD 1 FOR:

- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- UL Recognition **and** UL Listing
- Flexible Cable Routing Requirements

XTRA•GUARD 1 APPLICATIONS:

- High Technology Applications in Controlled Environments
- Medical Electronics
- Point-Of-Sale Equipment
- Computer Peripherals
- Industrial Process Controls

CHARACTERISTICS

OPERATING TEMPERATURE:
- –20°C to 80°C – AWM
- –20°C to 75°C – CM

VOLTAGE RATING:
- 300 Volt

COLOR DESCRIPTION:
- Color Code: 24, 22 AWG Chart B Page 365,
- 20, 18 AWG Chart A Page 365
- Jacket Colors: Gray, Black

PRODUCT DESCRIPTION:
- Conductor: Stranded Tinned Copper
- Insulation: Color-Coded Premium PVC
- Nylon Rip Cord for Ease of Jacket Stripping
- Jacket: Premium PVC

SPECIFICATIONS

- UL Type CM, AWM Style 2464
- CSA PCC FT4
- Passes UL VW-1 Flame Test
- Passes CSA FT4 Flame Test

UL LISTED Passes UL VW-1 Flame Test Underwriters Laboratories Inc. Certified Canadian Standards Association CE

AVAILABILITY

- **In Stock:** Gray 100 ft (30,5m), 500 ft (152m) and 1000 ft (305m) put-ups
- Made-To-Order: Black, 1000 ft (305m) minimum

▲ Also available in Gray 328 ft (100m)

24 AWG (0,23mm²), **7/32** (7x0,20mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Pairs	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5261C	1	0.032	0,81	0.16	4,1
5262C	2	0.032	0,81	0.20	5,1
▲ 5263C	3	0.032	0,81	0.23	5,8
5264C	4	0.032	0,81	0.25	6,4
5265C	5	0.032	0,81	0.27	6,9
5266C	6	0.032	0,81	0.29	7,3
▲ 5269C	9	0.032	0,81	0.33	8,4
5269/11C	11	0.032	0,81	0.36	9,1
▲ 5269/15C	15	0.032	0,81	0.40	10,1
5269/27C	27	0.032	0,81	0.50	12,7
5269/77C	77	0.083	2,11	0.86	21,8

22 AWG (0,35mm²), **7/30** (7x0,25mm), Insulation Thickness: **0.010"** (0,25mm)

XTRA•GUARD 1 Part No.	No. of Pairs	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5021C	1	0.032	0,81	0.17	4,3
5022C	2	0.032	0,81	0.22	5,7
5023C	3	0.032	0,81	0.25	6,5
5024C	4	0.032	0,81	0.28	7,1
5025C	5	0.032	0,81	0.30	7,7
5026C	6	0.032	0,81	0.31	7,8
5029/15C	15	0.032	0,81	0.45	11,5

20 AWG (0,56mm²), **7/28** (7x0,32mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Pairs	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5282C	2	0.032	0,81	0.30	7,5
5283C	3	0.032	0,81	0.32	8,2
5286C	6	0.032	0,81	0.42	10,6
5289C	9	0.032	0,81	0.49	12,4
5289/12C	12	0.032	0,81	0.53	13,5

18 AWG (0,81mm²), **16/30** (16x0,25mm), Insulation Thickness: **0.017"** (0,43mm)

XTRA•GUARD 1 Part No.	No. of Pairs	Jacket Thickness Inches	Jacket Thickness mm	Nominal Diameter Inches	Nominal Diameter mm
5032C	2	0.032	0,81	0.33	8,4
5033C	3	0.032	0,81	0.36	9,1
5036C	6	0.032	0,81	0.47	11,9
5039C	9	0.053	1,35	0.55	13,9
5039/12C	12	0.053	1,35	0.63	16,1

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