



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Communication, Control, and Industrial Cable



Get control of demanding applications



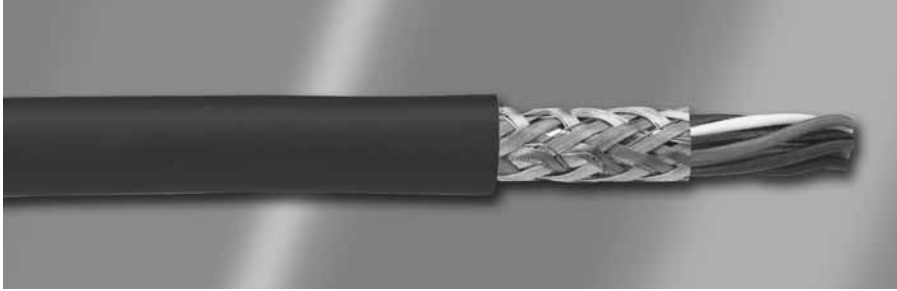
The broad range of communication and control cables from Alpha Wire means you can find the right cable for your application. Our cables meet special needs, such as low-capacitance cables for extended transmission of digital signals, such as the extra flexibility of rubber insulation and jackets, or excellent shielding for electrically noisy environments.

We combine a wide range of insulation materials, shielding variations, conductor counts and gauges, as well as other options to create cables suited to any application. From traditional RS-232 connections to high-speed telemetry and data recording to high-fidelity microphone systems, our experience in materials and expertise in manufacturing means cable built to perform electrically, mechanically, and environmentally.

Our communication and control line includes six main categories:

- **Solar cable:** a full range of solar cables for power and control.
- **Industrial automation cable:** cable for common automation protocols such as ControlNet, DeviceNet, and PROFIBUS.
- **Flexible motor supply cable:** four-conductor double-shielded cable suited for light-duty flexing.
- **Communication and control:** round multiconductor and multipair cable in configurations suited to nearly any application.
- **Low-smoke, zero-halogen cable:** minimizes the effects from smoke and harmful corrosive gases in the event of combustion.
- **Flat cable:** planar multiconductor cable used primarily inside cabinets or equipment.

Solar Cable



From residential rooftops to solar farms harvesting energy, our solar cables and photovoltaic wire are designed for the harsh environments of solar energy applications—the hot and cold of climate extremes, ozone and UV radiation, moisture, oil, and direct burial. Our specially formulated PVC jackets provide years of reliable service by withstanding the potential environments without failing or degrading.

A full range for power and control

No matter what your need in connecting solar power to the grid, we have wire and cable in a range of gauges and conductor counts to satisfy it.

Our cables meet regulatory and industry requirements for photovoltaic applications.

Applications

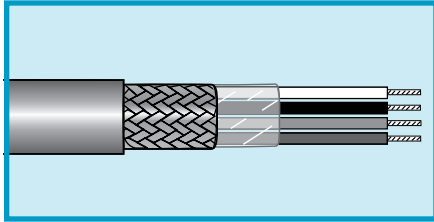
- Panel monitoring and control
- Panel to junction box
- Panel to collector
- Collector to inverter
- Grounding
- Motor supply

Photovoltaic Wire

For single-conductor needs, see page 417 for our line of photovoltaic wires.

Solar Cable

1000 V Braid Shield, Multiconductor, PVC/Nylon, PVC



UL TC-ER
UL WTTTC (1000 V)
UL MTW
CSA AWM I/II A/B FT1

Operating Temperature

- -40°C to +90°C (static)
- -30°C to +90°C (dynamic)
- +105°C (CSA)

Conductor Color Coding

- Chart F (page 532)

Materials

- Stranded bare copper conductors
- PVC/nylon insulation
- Clear polyester wrap
- Tinned copper braid shield, 85% coverage
- Green PVC jacket

Features

- UL Sunlight Resistant
- UL Oil Res. I
- UL Direct Burial
- Suitable for use in Class I, Division 2 locations per Article 501 of the National Electric Code

Availability

Bulk, cut to length

FIT® Tubing Recommendations

- FIT-260: Cross-linked polyolefin for ground identification
- FIT-300: Dual-wall polyolefin with meltable inner wall
- FIT-750: Bonding adhesive-lined cross-linked polyolefin

18 AWG (0.96 mm²)

Stranding: 19/30 (19 x 0.25 mm)
 Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1803CY	3	0.329	8.36	0.050	1.27
SPM1804CY	4	0.354	8.99	0.050	1.27
SPM1805CY	5	0.381	9.68	0.050	1.27
SPM1807CY	7	0.409	10.39	0.050	1.27
SPM1809CY	9	0.466	11.84	0.050	1.27

16 AWG (1.32 mm²)

Stranding: 26/30 (26 x 0.25 mm)
 Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1603CY	3	0.351	8.92	0.050	1.27
SPM1604CY	4	0.378	9.60	0.050	1.27
SPM1605CY	5	0.408	10.36	0.050	1.27
SPM1607CY	7	0.439	11.15	0.050	1.27
SPM1609CY	9	0.509	12.93	0.050	1.27

14 AWG (2.08 mm²)

Stranding: 41/30 (41 x 0.25 mm)
 Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1403CY	3	0.381	9.68	0.050	1.27
SPM1404CY	4	0.412	10.46	0.050	1.27
SPM1405CY	5	0.446	11.33	0.050	1.27
SPM1407CY	7	0.481	12.22	0.050	1.27
SPM1409CY	9	0.590	14.99	0.065	1.65

12 AWG (3.29 mm²)

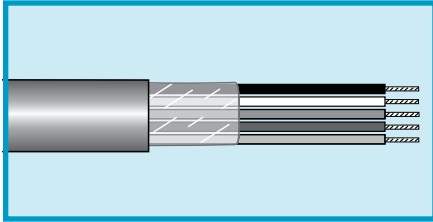
Stranding: 65/30 (65 x 0.25 mm)
 Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1203CY	3	0.422	10.72	0.050	1.27
SPM1204CY	4	0.458	11.63	0.050	1.27
SPM1205CY	5	0.497	12.62	0.050	1.27
SPM1207CY	7	0.574	14.58	0.065	1.65
SPM1209CY	9	0.659	16.74	0.065	1.65



Solar Cable

1000 V Unshielded, Multiconductor, PVC/Nylon, PVC



UL TC-ER
UL WTTTC (1000 V)
UL MTW
CSA AWM I/II A/B FT1

Operating Temperature

- -40°C to +90°C (static)
- -30°C to +90°C (dynamic)
- +105°C (CSA)

Conductor Color Coding

- Chart F (page 532)

Materials

- Stranded bare copper conductors
- PVC/nylon insulation
- Clear polyester wrap
- Green PVC jacket

Features

- UL Sunlight Resistant
- UL Oil Res. I
- UL Direct Burial
- Suitable for use in Class I, Division 2 locations per Article 501 of the National Electric Code

Availability

Bulk, cut to length

FIT® Tubing Recommendations

- FIT-260: Cross-linked polyolefin for ground identification
- FIT-300: Dual-wall polyolefin with meltable inner wall
- FIT-750: Bonding adhesive-lined cross-linked polyolefin

18 AWG (0.96 mm²)

Stranding: 19/30 (19 x 0.25 mm)
Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1803	3	0.301	7.65	0.050	1.27
SPM1804	4	0.326	8.28	0.050	1.27
SPM1805	5	0.353	8.97	0.050	1.27
SPM1807	7	0.381	9.68	0.050	1.27
SPM1809	9	0.438	11.13	0.050	1.27

16 AWG (1.32 mm²)

Stranding: 26/30 (26 x 0.25 mm)
Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1603	3	0.323	8.20	0.050	1.27
SPM1604	4	0.350	8.89	0.050	1.27
SPM1605	5	0.380	9.65	0.050	1.27
SPM1607	7	0.411	10.44	0.050	1.27
SPM1609	9	0.475	12.07	0.050	1.27

14 AWG (2.08 mm²)

Stranding: 41/30 (41 x 0.25 mm)
Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1403	3	0.353	8.97	0.050	1.27
SPM1404	4	0.384	9.75	0.050	1.27
SPM1405	5	0.418	10.62	0.050	1.27
SPM1407	7	0.453	11.51	0.050	1.27
SPM1409	9	0.556	14.12	0.065	1.65

12 AWG (3.29 mm²)

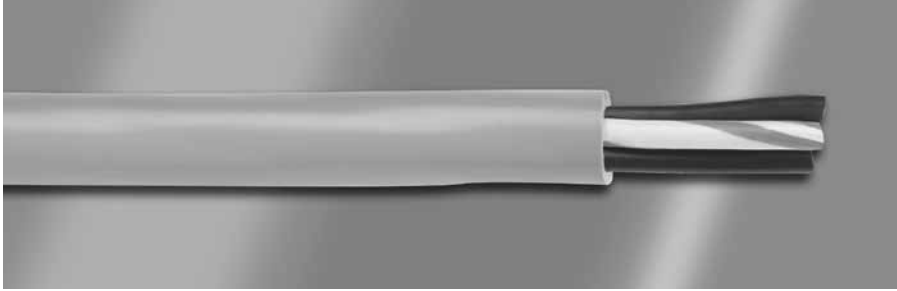
Stranding: 65/30 (65 x 0.25 mm)
Insulation thickness: 0.016 (0.41 mm) PVC/0.005 (0.12 mm) nylon

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
SPM1203	3	0.394	10.01	0.050	1.27
SPM1204	4	0.430	10.92	0.050	1.27
SPM1205	5	0.469	11.91	0.050	1.27
SPM1207	7	0.510	12.95	0.050	1.27
SPM1209	9	0.625	15.88	0.065	1.65



Industrial Automation Cable

Seamless communication for robust industrial environments



Whether you are designing a device for error proofing to increase quality or motion sensing to improve safety, trust Alpha Wire for all your Industrial Automation needs.

As industrial automation systems continue to increase in complexity, we understand the challenges that engineers and manufacturers face in designing and interconnecting system components from sensors to top-level controllers. Our range of industrial automation cables combines the industry-leading quality and exceptional reliability you expect with Alpha Wire with the performance to meet the rigorous requirements of the major automation communication architectures.

ControlNet™

Low-loss RG-6/U coax designed to meet the high-speed, time-critical requirements of modern ControlNet factory-floor automation systems.

RS-485

Bringing proven data transmission protocol to the factory floor, rugged RS-485 cables reduce electrical noise sensitivity to keep reliability and performance at world-class levels.

DeviceNet™

Meeting ODVA thick and thin specifications, the cables comply with Allen-Bradley 1485 CPI-A and 1485 CPI-C, and support high data rates (500 kb/s at 100 m and 125 kb/s at 500 m).

Fieldbus and PROFIBUS®

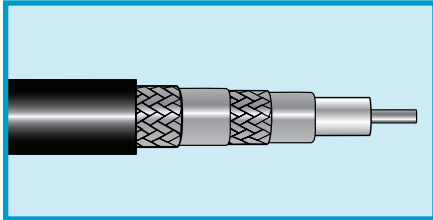
A complete family meets ruggedness, performance, and quality requirements of almost any fieldbus and PROFIBUS application environment.

Industrial Twinax

A robust physical media for the transmission of PLC/DCS signals in real-time, high-throughput applications, including Allen-Bradley Data Highway networks. The cables may be installed in the same tray or conduit as 600-volt power cable.

ControlNet

300 V, RG-6/U Coaxial Cable, Double Braid and Foil Shielded



UL CL2R
UL CMR
CSA CMG FT4

Operating Temperature

- -30°C to +75°C

Materials

- Solid bare Copperweld conductor
- Foam polyethylene insulation
- Shielding: double braid and foil
 Foil +60% aluminum braid +
 foil +40% aluminum braid
- Black PVC jacket

Features

- UL Sunlight Resistant
- 75-ohm nominal impedance
- 82% velocity of propagation
- 16.2 pF/ft (53.1 pF/m) nominal capacitance

Availability

100 ft (30.5 m)
 500 ft (152 m)
 1000 ft (305 m)

FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin

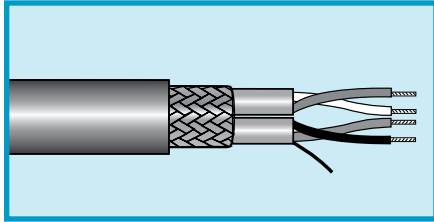
Part No.	Nominal Diameter		Center Conductor		Nominal Impedance (ohms)
	Inch	mm	AWG	mm ²	
6458	0.298	7.57	18	0.82	75

Frequency (MHz)	Nominal Attenuation	
	Attenuation, Nom.	
	dB/100 ft	dB/100 m
1	0.35	1.1
2	0.38	1.2
5	0.45	1.5
10	0.59	1.9
20	0.86	2.8
50	1.37	4.5
100	1.97	6.5
200	2.82	9.3
300	3.48	11.4
400	4.04	13.3



DeviceNet

300 V Power and Data, Class 2, ODVA Thick and Thin Trunks



Part No.	Type	Pairs	Nominal Diameter	
			Inch	mm
6451	Thick	1 Power: 15 AWG (1.75 mm ²), 19/0.0135 (19 x 0.35 mm) stranding	0.480	12.19
		1 Data: 18 AWG (0.96 mm ²), 19/30 (19 x 0.25 mm) stranding		
6452	Thin	1 Power: 22 AWG (0.38 mm ²), 19/34 (19 x 0.16 mm) stranding	0.280	7.11
		1 Data: 24 AWG (0.24 mm ²), 19/36 (19 x 0.13 mm) stranding		

- UL CMG
- UL PLTC-ER (Thick)
- UL CL2 (Thin)
- CSA CMG FT4
- CSA AWM I/II A/B FT4

Operating Temperature

- -20°C to +75°C (static)
- 0°C to +80°C (dynamic)

Conductor Color Coding

- Black-red power
- Blue-white data

Materials

- Tinned copper conductors
- Each pair individually foil shielded
- PVC insulation (power pair)
- Foam HDPE insulation (data pair)
- 65% tinned copper braid overall
- Slate PVC jacket

Features

- Oil resistant
- UL Sunlight Resistant
- 120-ohm nominal impedance (data pair)
- Compliant with Allen-Bradley part numbers 1485 CPI-A and 1485 CPI-C

Availability

- 100 ft (30.5 m)
- 500 ft (152 m)
- 1000 ft (305 m)

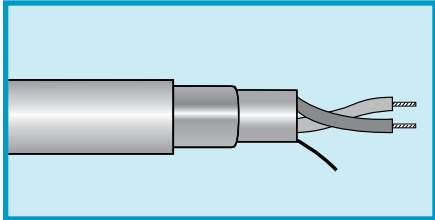
FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin



Fieldbus

300 V Single-Pair Cable, Fieldbus Types A and B



Part No.	Fieldbus Type	Pairs	Conductor		Stranding		Nominal Diameter	
			AWG	mm ²	AWG	mm	Inch	mm
6459	A	1	18	0.90	7/26	7 x 0.40	0.253	6.43
6460	B	1	22	0.33	7/0.0096	7 x 0.24	0.196	4.97

UL PLTC-ER
UL CM
UL ITC
CSA CM

Operating Temperature

- -30°C to +105°C

Conductor Color Coding

- Blue-orange

Materials

- Tinned copper conductors
- Polyolefin insulation
- Foil shield
- Orange PVC jacket

Features

- UL Sunlight Resistant
- 100-ohm nominal impedance

Availability

100 ft (30.5 m)
 500 ft (152 m)
 1000 ft (305 m)

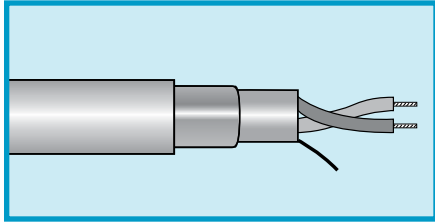
FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin



High-Speed Fieldbus

300 V Single-Pair Cable



Part No.	Pairs	Conductor		Stranding		Nominal Diameter	
		AWG	mm ²	AWG	mm	Inch	mm
6461	1	22	0.35	7/30	7 x 0.25	0.351	8.92

UL PLTC

UL CM

CSA CM

Operating Temperature

- -40°C to +75°C

Conductor Color Coding

- Blue-orange

Materials

- Tinned copper conductors
- Foam high-density polyethylene insulation
- Foil shield
- Orange PVC jacket

Features

- UL Sunlight Resistant
- 150-ohm nominal impedance

Availability

100 ft (30.5 m)

500 ft (152 m)

1000 ft (305 m)

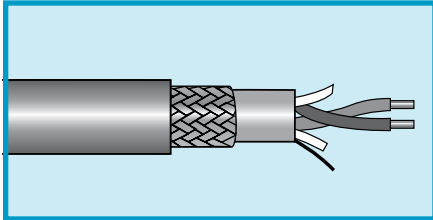
FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin



PROFIBUS-DP

300 V Single-Pair Cable



Part No.	Pairs	Conductor		Stranding		Nominal Diameter	
		AWG	mm ²	AWG	mm	Inch	mm
6462	1	22	0.32	Solid		0.315	8.00
6463	1	22	0.35	7/30	7 x 0.25	0.315	8.00

UL AWM 20201 (6462 only)
UL PLTC
UL CMG
CSA CMG FT4

Operating Temperature

- -30°C to +75°C (PLTC, CMG)
- -30°C to +60°C (AWM)

Conductor Color Coding

- Red-green

Materials

- Tinned solid or stranded copper conductors
- Foam high-density polyethylene insulation
- Foil + 65% tinned copper braid shield
- Purple PVC jacket

Features

- UL Sunlight Resistant
- 150-ohm nominal impedance

Availability

100 ft (30.5 m)
 500 ft (152 m)
 1000 ft (305 m)

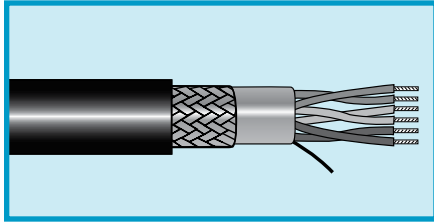
FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin



RS-485 Cable

300 V Foil + Braid, Multipair



UL CM, CMG
UL TC, PLTC
CSA CM, CMG FT1

Operating Temperature

- -20°C to +60°C

Conductor Color Coding

- Chart M (page 530), except 6454

Materials

- Tinned copper conductors
- Foam high-density polyethylene insulation
- Foil + 65% tinned copper braid shield
- Black PVC jacket

Features

- UL Sunlight Resistant
- 120-ohm nominal impedance

Availability

100 ft (30.5 m)
 500 ft (152 m)
 1000 ft (305 m)

FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin

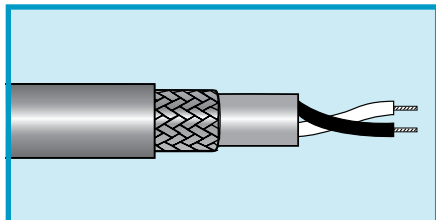
22 AWG (0.35 mm ²)							
Stranding: 7/30 (7 x 0.25 mm)							
Part No.	Pairs	Nominal Diameter		Insulation Thickness		Jacket Thickness	
		Inch	mm	Inch	mm	Inch	mm
6453	1	0.284	7.21	0.028	0.71	0.042	1.07
6454*	1.5	0.300	7.62	0.032	0.81	0.042	1.07
6455	2	0.408	10.36	0.024	0.61	0.053	1.35
6456	3	0.414	10.52	0.022	0.56	0.053	1.35
6457	4	0.448	11.38	0.022	0.56	0.053	1.35

*Conductor color coding: white/orange-orange/white pair, white-blue single conductor.



Industrial Twinax

600 V Foil + Braid Shield, Single Pair



Part No.	Pairs	Conductor		Stranding		Nominal Diameter	
		AWG	mm ²	AWG	mm	Inch	mm
6450	1	18	0.90	7/26	7 x 0.40	0.324	8.23

UL TC, PLTC, ITC

UL CMG

CSA CMG FT4

Operating Temperature

- -40°C to +75°C

Conductor Color Coding

- Blue-white

Materials

- Tinned stranded copper conductors
- Flame-resistant polypropylene insulation
- Foil + 55% tinned copper braid shield
- Blue PVC jacket

Features

- UL Sunlight Resistant
- 78-ohm nominal impedance
- Meets the requirements of Allen-Bradley Data Highway Networks

Availability

100 ft (30.5 m)

500 ft (152 m)

1000 ft (305 m)

FIT® Tubing Recommendations

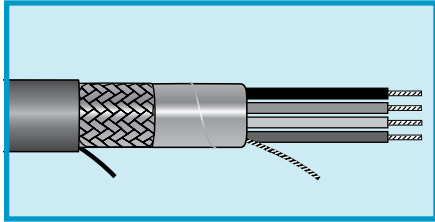
- FIT-221: General-purpose, cross-linked polyolefin
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin



Flexible Motor Supply Cable

Light Duty Flexing

600 V Foil/Braid, Four Conductor



UL TC-ER
 UL MTW
 UL WTTCC
 CSA AWM I/II A/B FT4
 CE

Operating Temperature

- -5°C to +90°C (flexing)
- -20°C to +90°C (stationary)

Conductor Color Coding

- One yellow/green and three numbered black

Materials

- Finely stranded bare copper conductors
- PVC/nylon insulation
- Foil + braid shield
 Aluminum/polyester/aluminum foil shield, with 25% overlap and four tinned copper drain wires
- Tinned copper braid with 70% coverage
- Black PVC jacket

Voltage

- 600 V (UL TC-ER, MTW)
- 1000 V (UL WTTCC)

Availability

Bulk, cut to length

FIT® Tubing Recommendations

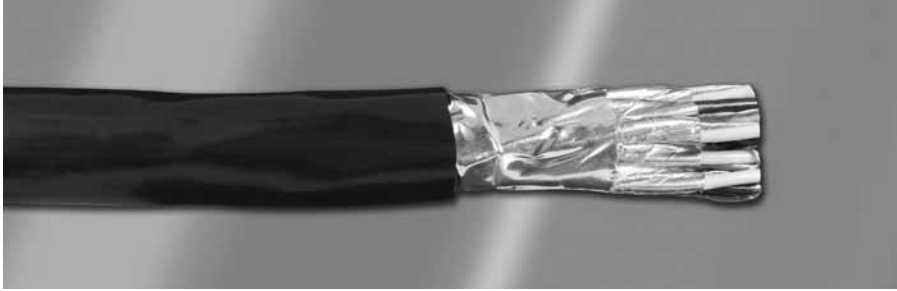
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin
- FIT-600: Highly flexible, cross-linked elastomer

16 to 6 AWG (1.49 to 5.33 mm²)

Part No.	Conductors	Wire Size		Stranding		Nominal Diameter		Jacket Thickness		Insulation Thickness	
		AWG	mm ²	AWG	mm	Inch	mm	Inch	mm	Inch	mm
5660	4	16	1.32	26/30	26 x 0.25	0.381	9.67	0.050	1.27	0.016	0.40
5661	4	14	2.08	41/30	41 x 0.25	0.418	10.61	0.050	1.27	0.016	0.40
5662	4	12	3.30	65/30	65 x 0.25	0.464	11.78	0.050	1.27	0.016	0.40
5663	4	10	5.32	105/30	105 x 0.25	0.579	14.70	0.063	1.60	0.022	0.55
5664	4	8	8.52	168/30	168 x 0.25	0.760	19.30	0.063	1.60	0.032	0.81
5665	4	6	13.49	266/30	266 x 0.25	0.901	22.88	0.083	2.10	0.032	0.81



A Full Range of Communication and Control



Our line-up of standard communication and control cables gives you maximum choice and fewer tradeoffs. By offering you a comprehensive collection of insulation/jacketing materials, shielding options, and conductor counts, you can easily select the cable that meets your most demanding needs. We have cables that go beyond the ordinary to satisfy rigorous requirements of EMI performance, transmission distances, flexibility, and temperature extremes.

Communication and control typical applications:

- Audio systems: speakers, microphones, intercoms
- Broadcast and studio
- Data transmission: RS-232, 422, 485
- CAD/CAM
- Computer peripherals
- Business machines
- Security systems: alarms, cameras, sensors
- Control systems
- Instrumentation systems
- Point-of-sale systems
- Banking systems

Communication and control key features:

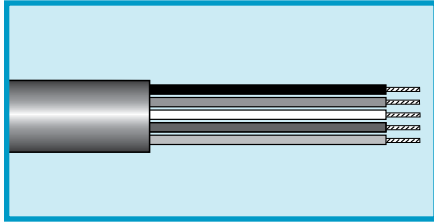
- 1 - 50 conductors, 1 - 50 pairs
- Wide range of insulation/jacket materials:
 - PVC
 - Irradiated PVC
 - Plenum-rated PVC
 - Semirigid PVC
 - Rubber
 - Polyethylene
 - Polypropylene
 - Foam PP and PE
 - PTFE/FEP
 - LSZH
- Low-capacitance cables for improved transmission distances and signal integrity

Flexible shielding options:

- Unshielded
- Overall foil shield
- Overall foil/braid
- Individual foil-shielded pairs
- Individual foil-shielded pairs with overall foil/braid

Communication and Control Cable

300 V Unshielded, Multiconductor, LSZH



**UL CM VW-1
CSA CMG FT4**

Operating Temperature

- -20°C to +75°C

Materials

- Stranded tinned copper conductors
- LSZH insulation
- Slate LSZH jacket

LSZH Properties

- LSZH Flammability: Passes IEC 60332-1
- LSZH Acid Gas Generation: Passes IEC 60754-1 and 60754-2
- LSZH Smoke Emission: Passes IEC 61034-2

Alpha Wire's LSZH communication and control cable combines LSZH-rated insulation and jackets with the rugged performance you expect from Alpha. The specially formulated LSZH material minimizes the effects from smoke and harmful corrosive gases in the event of combustion. Low smoke means easier visibility in exiting the area and reduced danger of smoke inhalation, while low toxicity means no harm to people from halogenated gases.

**LSZH Unshielded Multiconductor
Conductor Color Coding: Chart D**

22 AWG (0.35 mm²)

Stranding: 7/30 (7 x 0.25 mm)
Insulation thickness: 0.010 (0.25 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1172L	2	0.161	4.09	0.028	0.71
1173L	3	0.169	4.29	0.028	0.71
1174L	4	0.189	4.80	0.028	0.71
1175L	5	0.201	5.11	0.028	0.71
1176L	6	0.209	5.31	0.030	0.76
1177L	7	0.209	5.31	0.030	0.76
1178L	8	0.220	5.59	0.030	0.76
1179L	9	0.249	6.32	0.032	0.81
1180L	10	0.260	6.60	0.035	0.88

20 AWG (0.56 mm²)

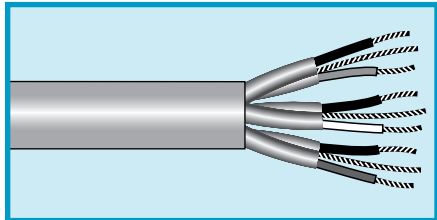
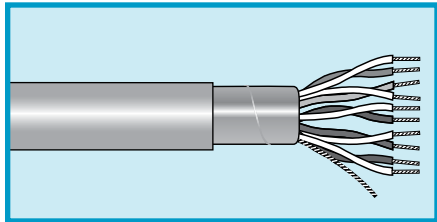
Stranding: 7/28 (0.32 mm)
Insulation thickness: 0.016 (0.40 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1895L	2	0.181	4.60	0.018	0.45
1896L	3	0.189	4.80	0.020	0.50
1896/4L	4	0.209	5.31	0.020	0.50
1896/5L	5	0.232	5.89	0.020	0.50
1896/6L	6	0.276	7.01	0.020	0.50



Communication and Control Cable

300 V Foil Shielded, Multipair, LSZH



Alpha Wire's LSZH communication and control cable combines LSZH-rated insulation and jackets with the rugged performance you expect from Alpha. The specially formulated LSZH material minimizes the effects from smoke and harmful corrosive gases in the event of combustion. Low smoke means easier visibility in exiting the area and reduced danger of smoke inhalation, while low toxicity means no harm to people from halogenated gases.

**UL CM VW-1
CSA CMG FT4**

Operating Temperature

- 20°C to +75°C

Materials

- Stranded tinned copper conductors
- LSZH insulation (Polypropylene insulation for individually foil shielded pairs)
- Aluminum/polyester shielding, with 25% overlap min. Foil facing inward
- Tinned copper drain wire sized the same as the conductors
- Slate LSZH jacket

LSZH Properties

- **LSZH Flammability:** Passes IEC 60332-1
- **LSZH Acid Gas Generation:** Passes IEC 60754-1 and 60754-2
- **LSZH Smoke Emission:** Passes IEC 61034-2

LSZH Overall Foil Shielded Multipair Conductor Color Coding: Chart A

24 AWG (0.22 mm²)

Stranding: 7/32 (7 x 0.20 mm)
Insulation thickness: 0.010 (0.25 mm)

Part No.	Pairs	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
5471L	1	0.161	4.09	0.028	0.71
5472L	2	0.209	5.31	0.028	0.71
5473L	3	0.228	5.79	0.028	0.71
5474L	4	0.240	6.10	0.028	0.71
5475L	5	0.272	6.91	0.030	0.76
5476L	6	0.299	7.59	0.030	0.76
5477L	7	0.299	7.59	0.030	0.76
5478L	8	0.319	8.10	0.032	0.81
5479L	9	0.339	8.61	0.032	0.81
5480L	10	0.378	9.60	0.032	0.81

LSZH Individually Foil-Shielded Pair Conductor Color Coding: Chart A

22 AWG (0.35 mm²)

Stranding: 7/30 (7 x 0.25 mm)
Insulation thickness: 0.010 (0.25 mm)

Part No.	Pairs	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
2466L**	2	0.161	4.09	0.014	0.35
6010L	3	0.299	7.59	0.047	1.19
2463L**	4	0.242	6.15	0.020	0.50
6012L	6	0.386	9.80	0.040	1.01
6014L	9	0.441	11.20	0.040	1.01
6017L	12	0.492	12.50	0.040	1.01

*Conductor color coding: 1 Red-Black, 2 Green-White, White/Red-White/Black, 4 White/Green-White/Yellow.

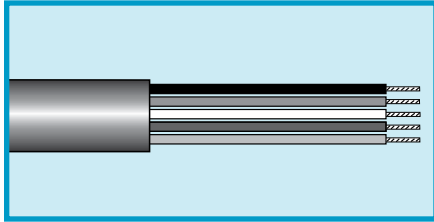
†0.009 (0.23) insulation thickness.

**0.008 (0.20) insulation thickness.



Communication and Control

300 V Unshielded, Multiconductor, PVC, PVC



UL AWM 2576 (150 V) VW-1
UL CM
CSA CMG FT4

Operating Temperature

- -20°C to +80°C (AWM)
- -20°C to +75°C (CM)
- -20°C to +60°C (CMG)

Conductor Color Coding

- Chart D (page 531)

Materials

- Stranded or solid tinned copper conductors
- PVC insulation
- Slate PVC jacket

Availability

100 ft (30.5 m)
 500 ft (152 m)
 1000 ft (305 m)

22 AWG (0.35 mm²)

Stranding: 7/30 (7 x 0.25 mm)
 Insulation thickness: 0.010 (0.25 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1172C	2	0.164	4.17	0.032	0.81
1173C	3	0.172	4.37	0.032	0.81
1174C	4	0.185	4.70	0.032	0.81
1175C	5	0.200	5.08	0.032	0.81
1176C	6	0.215	5.46	0.032	0.81
1177C	7	0.215	5.46	0.032	0.81
1178C	8	0.230	5.84	0.032	0.81
1179C	9	0.246	6.25	0.032	0.81
1180C	10	0.264	6.71	0.032	0.81
1181C	12	0.272	6.91	0.032	0.81
1181/15C	15	0.294	7.47	0.032	0.81
1181/20C	20	0.326	8.28	0.032	0.81
1181/25C	25	0.364	9.25	0.032	0.81
1181/30C	30	0.385	9.78	0.032	0.81
1181/40C	40	0.429	10.90	0.032	0.81
1181/50C	50	0.478	12.14	0.035	0.89
1181/60C	60	0.520	13.21	0.035	0.89

22 AWG (0.32 mm²)

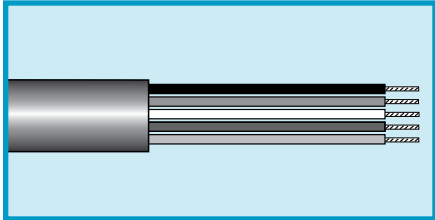
Stranding: Solid
 Insulation thickness: 0.010 (0.25 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1793C	2	0.157	3.99	0.032	0.81



Communication and Control

300 V Unshielded, Multiconductor, PVC, PVC



UL AWM 2509 VW-1
UL CM
CSA CMG FT4

Operating Temperature

- -20°C to +80°C (AWM)
- -20°C to +75°C (CM)
- -20°C to +60°C (CMG)

Conductor Color Coding

- Chart D (page 531)

Materials

- Stranded tinned copper conductors
- PVC insulation
- Slate PVC jacket

Availability

100 ft (30.5 m)
 500 ft (152 m)
 1000 ft (305 m)

20 AWG (0.56 mm²)

Stranding: 7/28 (7 x 0.32 mm)
 Insulation thickness: 0.016 (0.41 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1895C	2	0.180	4.57	0.020	0.51
1896C	3	0.191	4.85	0.020	0.51
1896/4C	4	0.209	5.31	0.020	0.51
1896/5C	5	0.230	5.84	0.020	0.51
1896/6C	6	0.251	6.38	0.020	0.51
1896/7C	7	0.251	6.38	0.020	0.51
1896/8C	8	0.273	6.93	0.020	0.51
1896/9C	9	0.301	7.65	0.023	0.58
1896/10C	10	0.320	8.13	0.020	0.51
1896/12C	12	0.331	8.41	0.020	0.51
1896/15C	15	0.382	9.70	0.030	0.76

18 AWG (0.81 mm²)

Stranding: 16/30 (16 x 0.25 mm)
 Insulation thickness: 0.016 (0.41 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1897C	2	0.198	5.03	0.020	0.51
1898C	3	0.210	5.33	0.020	0.51
1898/4C	4	0.231	5.87	0.020	0.51
1898/5C	5	0.254	6.45	0.020	0.51
1898/6C	6	0.278	7.06	0.020	0.51
1898/7C	7	0.278	7.06	0.020	0.51
1898/8C	8	0.313	7.95	0.025	0.64
1898/9C	9	0.337	8.56	0.025	0.64
1898/10C	10	0.366	9.30	0.025	0.64
1898/12C	12	0.378	9.60	0.025	0.64
1898/15C	15	0.423	10.74	0.030	0.76
1898/19C	19	0.455	11.56	0.030	0.76
1898/25C	25	0.544	13.82	0.035	0.89

16 AWG (1.32 mm²)

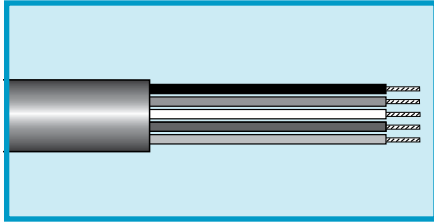
Stranding 19/0.0117 (19 x 0.29 mm)
 Insulation thickness: 0.016 (0.41 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1899C	2	0.222	5.64	0.020	0.51
1899/3C	3	0.236	5.99	0.020	0.51
1899/4C	4	0.260	6.60	0.020	0.51



Communication and Control

300 V Unshielded, Multiconductor, PVC, PVC



UL CL2 VW-1
CSA AWM I/II A/B FT1

Operating Temperature

- -20°C to +80°C (AWM)
- -20°C to +75°C (CL2)

Conductor Color Coding

- Chart D (page 531)

Materials

- Stranded tinned copper conductors
- PVC insulation
- Slate PVC jacket

Availability

100 ft (30.5 m)
500 ft (152 m)
1000 ft (305 m)

14 AWG (2.09 mm²)

Stranding: 41/30 (41 x 0.25 mm)
Insulation thickness: 0.020 (0.51 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1891C	2	0.268	6.81	0.020	0.51
1891/3C	3	0.286	7.26	0.020	0.51

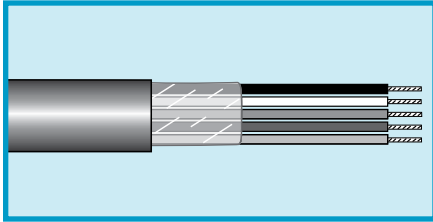
12 AWG (3.31 mm²)

Stranding: 65/30 (65 x 0.25 mm)
Insulation thickness: 0.020 (0.51 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1892C	2	0.312	7.92	0.023	0.58
1892/3C	3	0.333	8.46	0.023	0.58

Communication and Control

600 V Unshielded, Multiconductor, PVC, PVC



UL AWM 2463 VW-1

Operating Temperature

- -20°C to +80°C

Conductor Color Coding

- Chart F (page 532)

Materials

- Stranded tinned copper conductors
- PVC insulation
- Clear polyester wrap
- Slate PVC jacket

Availability

100 ft (30.5 m)

500 ft (152 m)

1000 ft (305 m)

16 AWG (1.32 mm²)

Stranding 19/0.0117 (19 x 0.29 mm)
Insulation Thickness 0.032 (0.81 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1064	4	0.395	10.03	0.047	1.19
1065	5	0.430	10.92	0.047	1.19
1067	7	0.468	11.89	0.047	1.19
1069	9	0.577	14.66	0.063	1.60
1072	12	0.640	16.26	0.063	1.60
1075	15	0.694	17.63	0.063	1.60
1079	19	0.749	19.02	0.065	1.65
1085	25	0.907	23.04	0.083	2.11

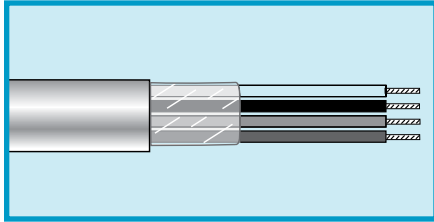
14 AWG (2.08 mm²)

Stranding (19 x 0.0147 (19 x 0.37 mm))
Insulation thickness: 0.047 (1.19 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
1274	4	0.503	12.78	0.047	1.19
1275	5	0.584	14.83	0.063	1.60
1277	7	0.635	16.13	0.063	1.60
1279	9	0.744	18.90	0.065	1.60
1282	12	0.867	22.02	0.083	2.11

Communication and Control

300 V Unshielded, Multiconductor, IRR PVC, PVC



MIL-DTL-16878/1 (Type B)
UL AWM 2576 (150 V) VW-1

Operating Temperature

- -55°C to +105°C (MIL)
- -55°C to +80°C (AWM)

Conductor Color Coding

- 1 White, 2 Black, 3 Red, 4 Green

Materials

- Stranded tinned copper conductors
- Irradiated PVC insulation
- Clear polyester wrap
- White PVC jacket

Availability

100 ft (30.5 m)
 500 ft (152 m)
 1000 ft (305 m)

24 AWG (0.22 mm²)

Stranding: 7/32 (7 x 0.20 mm)
 Insulation thickness: 0.010 (0.25 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
6622	2	0.155	3.94	0.032	0.81
6623	3	0.162	4.11	0.032	0.81
6624	4	0.173	4.39	0.032	0.81

22 AWG (0.35 mm²)

Stranding: 7/30 (7 x 0.25 mm)
 Insulation thickness: 0.010 (0.25 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
6632	2	0.167	4.24	0.032	0.81
6633	3	0.175	4.44	0.032	0.81
6634	4	0.188	4.78	0.032	0.81

20 AWG (0.56 mm²)

Stranding: 7/28 (7 x 0.32 mm)
 Insulation thickness: 0.010 (0.25 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
6642	2	0.183	4.65	0.032	0.81
6643	3	0.192	4.88	0.032	0.81
6644	4	0.207	5.26	0.032	0.81

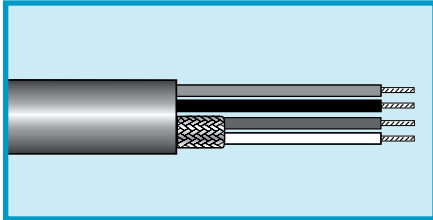
18 AWG (0.89 mm²)

Stranding: 7/26 (7 x 0.40 mm)
 Insulation thickness: 0.010 (0.25 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness	
		Inch	mm	Inch	mm
6652	2	0.203	5.16	0.032	0.81
6653	3	0.214	5.44	0.032	0.81
6654	4	0.232	5.89	0.032	0.81

Communication and Control

300 V Unshielded and Braid Shield, Multiconductor, PVC, PVC



**UL AWM 2785 VW-1
UL CM
CSA CMG FT4**

Operating Temperature

- -20°C to +75°C (CM)
- -20°C to +60°C (AWM, CMG)

Conductor Color Coding

See tables

Materials

- Stranded tinned copper conductors
- PVC insulation
- Tinned copper braid shield, 80% coverage
- Slate PVC jacket

Availability

100 ft (30.5 m)*
500 ft (152 m)*
1000 ft (305 m)

*Parts 1243, 1243/4, and 1243/5 only

22 AWG Composite Shielded and Unshielded, UL AWM 2785, UL CM, and CSA CMG

22 AWG (0.35 mm²)

Stranding 7/30 (7 x 0.25 mm)
Insulation Thickness 0.016 (0.41 mm)

Part No.	Conductors	Nominal Diameter		Jacket Thickness		Configuration	
		Inch	mm	Inch	mm	Shielded	Unshielded
1243	3	0.190	4.83	0.020	0.51	1	2
1243/4	4	0.185 x 0.285	4.70 x 7.24	0.020	0.51	2	2
1243/5	5	0.195 x 0.300	4.95 x 7.62	0.020	0.51	3	2

Conductor Color Coding
Shielded: 1 White, 2 Black, 3 Red
Unshielded: 1 Black, 2 Red

22 and 18 AWG Unshielded, UL CM and CSA CMG Only

22 AWG (0.35 mm²)

18 AWG (0.81 mm²)

Stranding: 7/30 (7 x 0.25 mm) 16/30 (16 x 0.25 mm)
Insulation thickness: 0.010 (0.25 mm) 0.018 (0.45 mm)

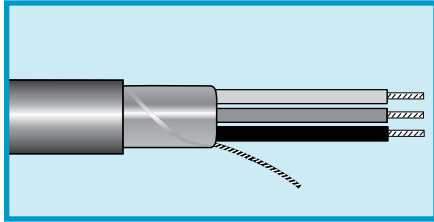
Part No.	Conductors		Nominal Diameter		Jacket Thickness	
	22 AWG	18 AWG	Inch	mm	Inch	mm
1826C	4	2	0.241	6.12	0.025	0.63
1827C	5	2	0.247	6.27	0.028	0.71
1828C	6	2	0.261	6.63	0.028	0.71

Conductor Color Coding
22 AWG: Chart I (page 533)
18 AWG: Chart D (page 531)



Communication and Control

300 V Foil Shield, Multiconductor, PE, PVC



**UL AWM 2092, 2093,
2094 VW-1**
UL CMG
CSA CMG FT4

Operating Temperature

- -20°C to +75°C (CMG)
- -20°C to +60°C (AWM)

Conductor Color Coding

- 1 Black, 2 Red, 3 Natural, 4 Green

Materials

- Stranded tinned copper conductors
- Polyethylene insulation
- Aluminum/polyester foil shield, 25% overlap min.
Foil facing outward
- Stranded tinned copper drain wire (see table for sizes)
- Slate PVC jacket

Availability

100 ft (30.5 m)
500 ft (152 m), spool or box
1000 ft (305 m), spool or box

24 AWG (0.23 mm²)

Stranding: 7/32 (7 x 0.20 mm)
Insulation thickness: 0.016 (0.41 mm)
24 AWG (0.22 mm²) drain wire

Part No.	Conductors	Nominal Diameter		Jacket Thickness		AWM
		Inch	mm	Inch	mm	
2400C	2	0.156	3.96	0.020	0.51	2092

22 AWG (0.35 mm²)

Stranding: 7/30 (7 x 0.25 mm)
Insulation thickness: 0.016 (0.41 mm)
22 AWG (0.35 mm²) drain wire

Part No.	Conductors	Nominal Diameter		Jacket Thickness		AWM
		Inch	mm	Inch	mm	
2401C*	2	0.168	4.27	0.020	0.51	2092
2402C	2	0.168	4.27	0.020	0.51	2092
2403C	3	0.178	4.52	0.020	0.51	2093
2404C	4	0.194	4.93	0.020	0.51	2094

20 AWG (0.56 mm²)

Stranding: 7/28 (7 x 0.32 mm)
Insulation thickness: 0.016 (0.41 mm)
20 AWG (0.50 mm²) drain wire

Part No.	Conductors	Nominal Diameter		Jacket Thickness		AWM
		Inch	mm	Inch	mm	
2411C*	2	0.184	4.67	0.020	0.51	2092
2412C	2	0.184	4.67	0.020	0.51	2092
2413C	3	0.195	4.95	0.020	0.51	2093
2414C	4	0.213	5.41	0.020	0.51	2094

18 AWG (0.81 mm²)

Stranding: 16/30 (16 x 0.25 mm)
Insulation thickness: 0.016 (0.41 mm)
20 AWG (0.50 mm²) drain wire

Part No.	Conductors	Nominal Diameter		Jacket Thickness		AWM
		Inch	mm	Inch	mm	
2421C*	2	0.202	5.13	0.020	0.51	2092
2422C	2	0.202	5.13	0.020	0.51	2092
2423C	3	0.214	5.44	0.020	0.51	2093
2424C	4	0.235	5.97	0.020	0.51	2094

16 AWG (1.32 mm²)

Stranding: 19/0.117 (19 x 0.30 mm)
Insulation thickness: 0.016 (0.41 mm)
18 AWG (0.81 mm²) drain wire

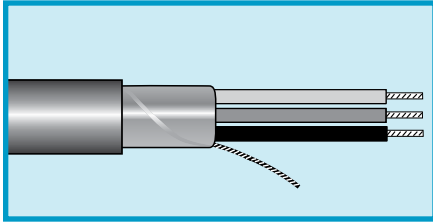
Part No.	Conductors	Nominal Diameter		Jacket Thickness		AWM
		Inch	mm	Inch	mm	
2432C	2	0.226	5.74	0.020	0.51	2092
2433C	3	0.240	6.10	0.020	0.51	2093

*Color code: 1 black, 2 natural.



Communication and Control

300 V Foil Shield, Multiconductor, PE, PVC



14 AWG (2.08 mm²)

Stranding: 41/30 (41 x 0.25 mm)
 Insulation thickness: 0.020 (0.51 mm)
 16 AWG (1.32 mm²) drain wire

Part No.	Conductors	Nominal Diameter		Jacket Thickness		UL
		Inch	mm	Inch	mm	
2442C	2	0.292	7.42	0.030	0.76	CL2

UL CL2
CSA AWM I/II A/B FT4

Operating Temperature

- -20°C to +75°C (CL2)
- -20°C to +60°C (AWM)

Conductor Color Coding

- 1 Black, 2 Red, 3 Natural, 4 Green

Materials

- Stranded tinned copper conductors
- Polyethylene insulation
- Aluminum/polyester foil shield, 25% overlap min.
 Foil facing outward
 Stranded tinned copper drain wire (see table for sizes)
- Slate PVC jacket

Availability

100 ft (30.5 m)
 500 ft (152 m), spool or box
 1000 ft (305 m), spool or box

12 AWG (3.29 mm²)

Stranding: 65/30 (65 x 0.25 mm)
 Insulation thickness: 0.020 (0.51 mm)
 14 AWG (2.08 mm²) drain wire

Part No.	Conductors	Nominal Diameter		Jacket Thickness		UL
		Inch	mm	Inch	mm	
2444C	2	0.330	8.38	0.030	0.76	CL2

