

## Firewall® III

### Thermocouple Extension Cable

Multi-Shielded Pairs Without Overall Shield

(XLPE/CSPE)  
 (90°C\*, 600 Volt  
 Class 1E Nuclear  
 NEC Type TC  
 UL Listed

Spec. RSS-3-021

## Scope

Firewall® III Thermocouple Extension Cable is a totally thermoset construction specifically designed for applications in power generation plants, substations and other similar locations. It is intended for use in harsh and demanding environments, including

Class 1E nuclear applications. It may be installed in trays, ducts, conduits or in direct burial applications. *Designed for use on circuits where shielding over individual pairs is required but additional overall shielding is not critical.*

## Features

- Thermoset insulation and jacket for enhanced thermal stability
- Specially formulated insulation for superior long term water resistance
- Extremely flame retardant
- Nuclear qualified with a minimum 40-year thermal life expectancy at 90°C
- Radiation resistant (up to 200 megarads)
- Full traceability
- Excellent mechanical properties
- All singles pass a wet dielectric (tank) test prior to cabling to verify insulation integrity
- All jackets have printed sequential footage markers for improved inventory control
- Easy strippability for installation ease
- Shield to shield isolation system provided and verified by electrical testing

\* Rated 90°C for normal operation in wet and dry locations, 130°C for emergency overload conditions, and 250°C for short circuit conditions.

## Performance Standards

- UL listed Type TC for cable tray installations (UL 1277)
- Insulation in accordance with ICEA Standard S-66-524 and UL approved for 90°C applications in both wet & dry locations
- Jackets in accordance with ICEA Standard S-19-81 for heavy-duty chlorosulfonated polyethylene (CSPE)
- Class 1E qualified in accordance with IEEE-383 1974 and IEEE-323 (Rockbestos Reports QR-5804 or QR-5805)
- Cable passes IEEE-383 1974 70,000 BTU/hr vertical tray flame test as modified by NRC Reg. Guide 1.131
- Cable passes ICEA 210,000 BTU/hr vertical tray flame test (Standard T-29-520)
- Single conductors pass the vertical flame tests specified in IEEE-383 1974 para. 2.5.6 (ICEA S-19-81 Section 6.19.6) and UL VW-1
- ANSI standard MC 96.1
- Quality assurance program in accordance with 10 CFR 50 Appendix B
- Cable components are in compliance with the maximum leachable lead level required by the EPA in 40 CFR, Part 261

## Construction

### Conductor:

Solid alloys per ANSI MC 96.1 (Extension Grade, standard limits of error)

### Insulation:

Proprietary heat, moisture and radiation resistant flame retardant crosslinked polyethylene

### Pair Assembly:

Two insulated conductors twisted with a flexible strand, tin-coated copper drain wire, a helically applied aluminum/polyester laminated tape shield and an isolation tape

### Cabling:

Required number of pairs cabled together

### Circuit Identification:

Individual pair single conductors color coded to ANSI requirements by means of pigmented insulation with printed pair numbers on both singles for pair identification

### Fillers:

(When required)

### Binder Tape:

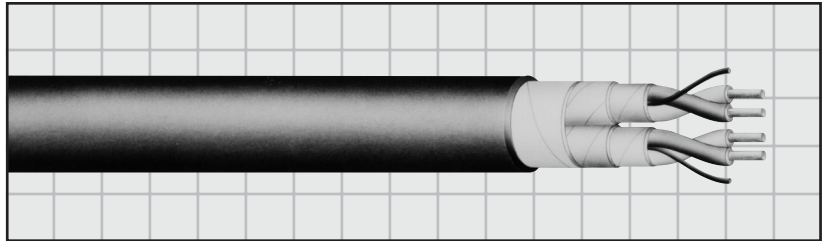
Helically applied

### Jacket:

Heavy-duty chlorosulfonated polyethylene (colors to ANSI standard by type)

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## 16 AWG Solid

Product Code*	Number of Pairs	Conductor Type*	Insulation Thickness		Insulated Conductor Diameter (Inch)	Drain Wire Size/ Stranding	Jacket Thickness (Mils)	Nominal Overall Diameter		Approximate Net Weight (Lbs/M')
			(Inch)	(mm)				(Inch)	(mm)	
I67-3531	2	JX	.025	.64	.10	18 AWG (16/s)	45	.49	12.45	140
I67-3535	3	JX	.025	.64	.10	18 AWG (16/s)	45	.52	13.21	175
I67-3539	4	JX	.025	.64	.10	18 AWG (16/s)	60	.60	15.24	230
I67-3543	5	JX	.025	.64	.10	18 AWG (16/s)	60	.65	16.51	280
I67-3547	7	JX	.025	.64	.10	18 AWG (16/s)	60	.71	18.03	310
I67-3551	9	JX	.025	.64	.10	18 AWG (16/s)	80	.87	22.10	435
I67-3555	12	JX	.025	.64	.10	18 AWG (16/s)	80	.98	24.89	550
I67-3559	15	JX	.025	.64	.10	18 AWG (16/s)	80	1.08	27.43	645
I67-3563	19	JX	.025	.64	.10	18 AWG (16/s)	80	1.14	28.96	755
I67-3567	37	JX	.025	.64	.10	18 AWG (16/s)	80	1.53	38.86	1370

## 18 AWG Solid

I67-3684	2	JX	.025	.64	.09	20 AWG (10/s)	45	.45	11.43	115
I67-3688	3	JX	.025	.64	.09	20 AWG (10/s)	45	.48	12.19	140
I67-3692	4	JX	.025	.64	.09	20 AWG (10/s)	60	.55	13.97	185
I67-3696	5	JX	.025	.64	.09	20 AWG (10/s)	60	.60	15.24	220
I67-3507	7	JX	.025	.64	.09	20 AWG (10/s)	60	.65	16.51	240
I67-3511	9	JX	.025	.64	.09	20 AWG (10/s)	60	.76	19.30	305
I67-3515	12	JX	.025	.64	.09	20 AWG (10/s)	80	.90	22.86	425
I67-3519	15	JX	.025	.64	.09	20 AWG (10/s)	80	.99	25.15	490
I67-3523	19	JX	.025	.64	.09	20 AWG (10/s)	80	1.04	26.42	570
I67-3527	37	JX	.025	.64	.09	20 AWG (10/s)	80	1.39	35.31	1020

\* **Product Code Sequence:** Codes for other alloy combinations can be obtained by applying the following numbering sequence:

Type	Product Code
EX	Add "1" to above "JX" code
KX	Add "2" to above "JX" code
TX	Add "3" to above "JX" code

Example: I67-3532 = 2 PAIR 16 AWG Type "EX"