

Firewall® III

Thermocouple Extension Cable

Multi-Shielded Pairs With 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 complete isolation is required between pairs and from external electrostatic interference.*

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

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 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)

Overall Shield System:

Helically applied aluminum/polyester laminated tape shield in continuous contact with a flexible strand, tin-coated copper drain wire

Binder Tape:

Helically applied

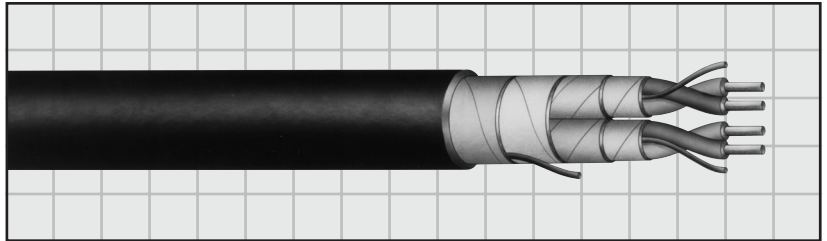
Jacket:

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

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

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90°C, 600 Volt
Class 1E Nuclear
NEC Type TC UL Listed



Spec. RSS-3-021

16 AWG Solid

| Product Code* | Number of Pairs | Conductor Type* | Insulation Thickness | | Insulated Conductor Diameter | Drain Wire Size/Stranding | Jacket Thickness | Nominal Overall Diameter | | Approximate Net Weight |
|---------------|-----------------|-----------------|----------------------|------|------------------------------|---------------------------|------------------|--------------------------|-------|------------------------|
| | | | (Inch) | (mm) | (Inch) | | (Mils) | (Inch) | (mm) | (Lbs/M') |
| I67-3595 | 2 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 45 | .49 | 12.45 | 145 |
| I67-3599 | 3 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 60 | .55 | 13.97 | 195 |
| I67-3603 | 4 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 60 | .63 | 16.00 | 255 |
| I67-3607 | 5 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 60 | .68 | 17.27 | 305 |
| I67-3611 | 7 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 60 | .74 | 18.80 | 340 |
| I67-3615 | 9 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 80 | .90 | 22.86 | 465 |
| I67-3619 | 12 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 80 | 1.01 | 25.65 | 585 |
| I67-3623 | 15 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 80 | 1.11 | 28.19 | 680 |
| I67-3627 | 19 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 80 | 1.17 | 29.72 | 795 |
| I67-3631 | 37 | JX | .025 | .64 | .10 | 18 AWG (16/s) | 80 | 1.56 | 39.62 | 1420 |

18 AWG Solid

| | | | | | | | | | | |
|----------|----|----|------|-----|-----|---------------|----|------|-------|------|
| I67-3700 | 2 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 45 | .45 | 11.43 | 115 |
| I67-3704 | 3 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 45 | .48 | 12.19 | 140 |
| I67-3708 | 4 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 60 | .58 | 14.73 | 200 |
| I67-3712 | 5 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 60 | .63 | 16.00 | 240 |
| I67-3571 | 7 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 60 | .68 | 17.27 | 260 |
| I67-3575 | 9 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 60 | .79 | 20.07 | 330 |
| I67-3579 | 12 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 80 | .92 | 23.37 | 450 |
| I67-3583 | 15 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 80 | 1.02 | 25.91 | 520 |
| I67-3587 | 19 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 80 | 1.07 | 27.18 | 605 |
| I67-3591 | 37 | JX | .025 | .64 | .09 | 20 AWG (10/s) | 80 | 1.42 | 36.07 | 1060 |

* **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: I67-3596 = 2 PAIR 16 AWG Type "EX"