

90°C*, 600 Volt
Class 1E Nuclear
NEC Type TC
UL Listed
Spec. RSS-3-021

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
- Tin-coated copper conductors for improved terminations and corrosion resistance
- All singles pass a wet dielectric (tank) test prior to cabling to verify electrical integrity
- All jackets have printed sequential footage markers for improved inventory control
- Easy strippability for installation ease

Scope

Firewall[®] III Instrumentation 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 to perform a variety of signaling and related functions. Designed for use on circuits where shielding from external electrostatic interference is required.

Performance Standards

- 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
- Quality Assurance program in accordance with 10 CFR 50 Appendix B
- UL Listed Type TC for cable tray installations (UL 1277)
- In accordance with the National Electrical Code (approved for Class 1, Division 2 hazardous locations)

Construction

Conductor: Annealed, tin-coated copper, Class "B" strand (ASTM B-8 & B-33)

Insulation: Proprietary heat, moisture and radiation resistant flame retardant crosslinked polyethylene

Circuit Identification: Colored insulation per ICEA Method 1, Table K-1

Fillers: (When required)

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: Black, heavy-duty chlorosulfonated polyethylene (also available in neoprene and FR-XLPE)

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

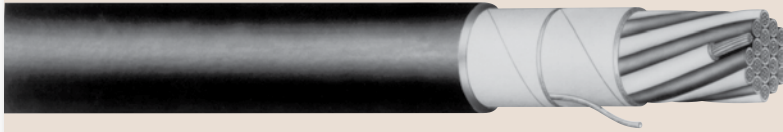
** Not required on 2, 3 and 4 conductor configurations



A Marmon Wire & Cable / Berkshire Hathaway Company

Firewall[®] III Instrumentation Cable

Multi-Conductor Shielded
(XLPE/CSPE)



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16 AWG, 7 Strand

Product Code	Number of Conductors	Insulation Thickness (inch)	Insulation Thickness (mm)	Insulated Conductor Diameter (inch)	Drain Wire Size/Stranding	Jacket Thickness (Mils)	Nominal Overall Diameter (inch)	Nominal Overall Diameter (mm)	Approximate Net Weight (Lbs/M')
I46-0021	2	.025	.64	.11	18 AWG (16/s)	45	.31	7.87	65
I46-0031	3	.025	.64	.11	18 AWG (16/s)	45	.33	8.38	81
I46-3433	4	.025	.64	.11	18 AWG (16/s)	45	.36	9.14	100
I46-3444	5	.025	.64	.11	18 AWG (16/s)	45	.42	10.76	135
I46-3425	7	.025	.64	.11	18 AWG (16/s)	45	.45	11.43	145
I46-3447	9	.025	.64	.11	18 AWG (16/s)	45	.52	13.21	180
I46-3449	12	.025	.64	.11	18 AWG (16/s)	60	.61	15.49	250
I46-3450	15	.025	.64	.11	18 AWG (16/s)	60	.66	16.76	295
I46-3451	19	.025	.64	.11	18 AWG (16/s)	60	.70	17.78	345
I46-5979	27	.025	.64	.11	18 AWG (16/s)	60	.82	20.83	465
I46-5980	37	.025	.64	.11	18 AWG (16/s)	80	.95	24.13	650

18 AWG, 7 Strand

Product Code	Number of Conductors	Insulation Thickness (inch)	Insulation Thickness (mm)	Insulated Conductor Diameter (inch)	Drain Wire Size/Stranding	Jacket Thickness (Mils)	Nominal Overall Diameter (inch)	Nominal Overall Diameter (mm)	Approximate Net Weight (Lbs/M')
I57-0021	2	.025	.64	.10	20 AWG (10/s)	45	.29	7.37	55
I57-0031	3	.025	.64	.10	20 AWG (10/s)	45	.31	7.87	65
I57-0041	4	.025	.64	.10	20 AWG (10/s)	45	.33	8.38	80
I57-0051	5	.025	.64	.10	20 AWG (10/s)	45	.38	9.65	105
I57-0071	7	.025	.64	.10	20 AWG (10/s)	45	.41	10.41	110
I57-0091	9	.025	.64	.10	20 AWG (10/s)	45	.47	11.94	140
I57-0121	12	.025	.64	.10	20 AWG (10/s)	45	.52	13.21	170
I57-0151	15	.025	.64	.10	20 AWG (10/s)	60	.61	15.49	225
I57-0191	19	.025	.64	.10	20 AWG (10/s)	60	.63	16.00	260
I57-0271	27	.025	.64	.10	20 AWG (10/s)	60	.75	19.05	350
I57-0371	37	.025	.64	.10	20 AWG (10/s)	60	.83	16.00	450

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