Okonite® FMR-N® X-Olene® FMR®

600 Volt Instrumentation Cable

Pairs or Triads - Overall Shield Type P-OS 90°C Rating
For Class 1E Nuclear Plant Use

A Stranded Tinned Copper Conductors
B Okonite FMR-N Insulation
C Twisted Pair/Triad
D Polyester Tape (as needed)
E Tinned Copper Drain Wire
F Copper/Polyester/Nomex Shield Tape
G Rip Cord
H X-Olene FMR Jacket

Insulation

Okonite FMR-N is Okonite's trade name for its heat, moisture, flame and chemically resistant, mechanically rugged nuclear plant qualified ethylene-propylene insulation compound. Its physical properties and flame retardency permit its use without a jacket on the single conductors.

The properties of Okonite FMR-N insulation substantially enhance the well known features of ethylene propylene rubber insulations.

Nuclear qualified Okonite FMR-N cables meet IEEE Standard - 383 LOCA and flame test criteria.

Overall Jacket

The overall jacket is a cross-linked polyethylene compound. This combination construction assures circuit security because of its high mechanical strength and excellent resistance to moisture, ozone, oil and many chemicals.

Applications

Okonite FMR-N Instrumentation Cables are recommended for use in power generating plants and in substations; designed especially for critical circuits where continuity of service is of prime importance. This premium quality instrumentation cable is recommended for wet or dry, ac or dc service at conductor temperatures to 90°C. They may be installed in conduits, ducts, cable troughs, trays, messenger supported, or directly buried in the earth.

Specifications

Conductors: Tinned copper per ASTM B-33, Class B stranded per ASTM B-8.

Insulation: Okonite FMR-N meets or exceeds the electrical and physical requirements of ICEA S-73-532.

Conductor Identification: Pigmented black and white in pairs, black, white and red in triads; white conductor numerically printed for group identification.

Assembly: Pairs or triads assembled with left-hand lay. Flame-retardant, non-wicking fillers included where required to provide a round cable.

Cable Shield: Copper/Polyester/Nomex tape overlapped to provide 100% coverage, and a 7-strand tinned copper drain wire, same size as conductor.

Overall Jacket: The X-Olene FMR compound meets or exceeds the requirements of thermoset jackets given in ICEA S-73-532.

Product Features

- Qualified as Class 1E cable
- Flame retardant - passes the IEEE 383 and 1202 flame test requirements.
- Quality Assurance traceability
- 90°C rated control cable, factory assembled for indoor or outdoor installation in cable trays, in raceways, direct burial in the earth, or supported by messenger wire.
- Mechanically rugged.
- Color coded conductors.
- Resistant to water, oil and many chemicals.
- Thermally stable at elevated temperatures.
- High insulation resistance, even at elevated temperatures.
- Small diameter, lightweight.

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Okonite FMR-N Insulation—25 mils

Catalog Number	Size AWG Strands	Number of Pairs	Number of Triads	Jacket Thickness - mils	Nominal Cable O.D. - In.	Cross-Sectional Area (sq. in.)	Approx Net Weight (lbs/1000')	Approx Ship Weight (lbs/1000')
267-16-2301	18 (7x)	1	45	0.31	0.08	49	60
267-16-2302		2	45	0.42	0.14	98	121
267-16-2304		4	60	0.60	0.28	152	176
267-16-2308		8	60	0.73	0.42	275	313
267-16-2312		12	80	0.87	0.59	380	443
267-16-2316		16	80	0.98	0.75	469	533
267-16-2320		20	80	1.09	0.93	585	664
267-16-2324		24	80	1.17	1.08	722	802
267-17-2301		1	45	0.32	0.08	60	71
267-17-2302		2	45	0.45	0.16	127	150
267-17-2304		4	60	0.66	0.34	223	262
267-17-2308		8	60	0.86	0.58	352	416
267-17-2312		12	80	1.08	0.92	527	607
267-17-2316		16	80	1.20	1.13	654	734
267-17-2320		20	80	1.33	1.39	826	932
267-17-2324		24	80	1.46	1.67	1014	1120
267-16-2401	16 (7x)	1	45	0.33	0.09	62	73
267-16-2402		2	45	0.44	0.15	125	148
267-16-2404		4	60	0.58	0.26	208	232
267-16-2408		8	60	0.77	0.47	335	374
267-16-2412		12	80	0.97	0.74	492	556
267-16-2416		16	80	1.05	0.87	608	688
267-16-2421		20	80	1.18	1.09	774	854
267-16-2424		24	80	1.29	1.31	960	1065
267-17-2401		1	45	0.35	0.10	77	88
267-17-2402		2	60	0.63	0.31	194	218
267-17-2404		4	60	0.73	0.42	281	319
267-17-2408		8	80	0.98	0.75	503	567
267-17-2412		12	80	1.19	1.11	698	778
267-17-2416		16	80	1.32	1.37	870	976
267-17-2420		20	80	1.47	1.70	1098	1204
267-17-2424		24	80	1.62	2.06	1355	1497

Visit Okonite's web site, www.okonite.com, for the most up to date dimensions.

ELECTRICAL CHARACTERISTICS

Conductor Resistance, nominal ohms/1000 ft. @20°C
- 18 AWG 6.92
- 16 AWG 4.35

Insulation Resistance Constant
@60°F, minimum.....20,000 Megohms-1000 ft.

Loop Resistance, nominal (2 conductor)
ohms-1000 ft @20°C
- 18 AWG 14.0
- 16 AWG 8.7

Mutual Capacitance (PF/ft.), nominal
- 1 Pr #18 AWG..... 25
- 1 Pr #16 AWG.....29

THE OKONITE COMPANY
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