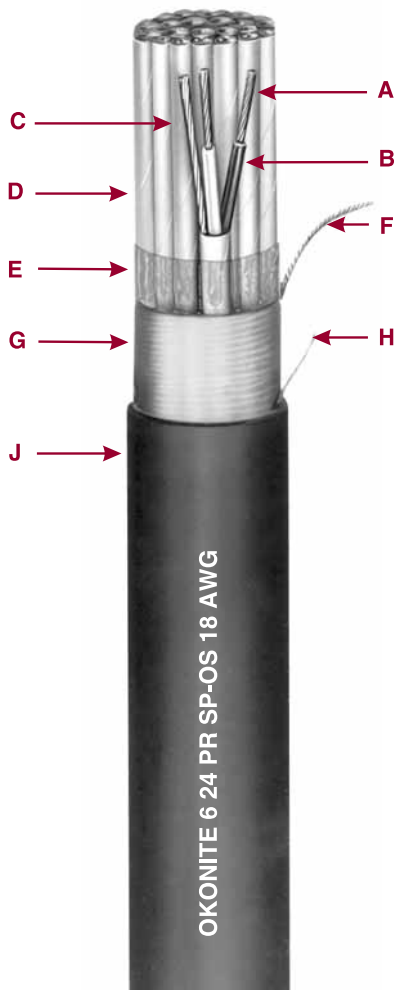




Okonite® FMR-N® X-Olene® FMR®

600 Volt Instrumentation Cable

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



- A Stranded Tinned Copper Conductors
- B Okonite FMR-N Insulation
- C Tinned Copper Drain Wire
- D Copper/Polyester Shield Tape
- E Polyester Tape (as needed)
- F Tinned Copper Drain Wire
- G Copper/Polyester/Nomex Shield Tape
- H Rip Cord
- J 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 retardancy 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.

Group Shield: Copper/polyester tape overlapped to provide 100% coverage, and a 7-strand tin coated copper drain wire, two sizes smaller than the conductor. All group shields are completely isolated from each other.

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.
- Individual units are completely isolated for maximum noise rejection.
- 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.

Okonite FMR-N X-Olene FMR

600 Volt Instrumentation Cable

Shielded Pairs or Triads - Overall Shield (Type SP-OS) 90°C Rating
For Class 1E Nuclear Plant Use

Product Data Section 5: Sheet 44

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')
268-16-2302	18 (7x)	2	45	0.48	0.18	128	151	
268-16-2304		4	60	0.67	0.35	192	231	
268-16-2308		8	60	0.80	0.50	330	369	
268-16-2312		12	80	0.95	0.71	486	550	
268-16-2316		16	80	1.08	0.92	608	688	
268-16-2320		20	80	1.18	1.09	721	801	
268-16-2324		24	80	1.42	1.58	954	1097	
268-17-2302		2	45	0.54	0.23	153	177	
268-17-2304		4	60	0.70	0.38	260	299	
268-17-2308		8	80	0.90	0.64	453	517	
268-17-2312		12	80	1.09	0.93	625	705	
268-17-2316		16	80	1.12	0.99	770	850	
268-17-2320	20	80	1.25	1.23	975	1081		
268-17-2324	24	80	1.49	1.74	1217	1360		
268-16-2402	16 (7x)	2	45	0.53	0.22	152	175	
268-16-2404		4	60	0.66	0.34	253	292	
268-16-2408		8	60	0.84	0.55	410	474	
268-16-2412		12	80	1.05	0.87	609	673	
268-16-2416		16	80	1.21	1.15	772	852	
268-16-2420		20	80	1.30	1.33	966	1072	
268-16-2424		24	80	1.37	1.47	1175	1281	
268-17-2402		2	60	0.61	0.29	208	232	
268-17-2404		4	60	0.72	0.41	348	387	
268-17-2408		8	80	1.01	0.80	574	638	
268-17-2412		12	80	1.20	1.13	801	881	
268-17-2416		16	80	1.34	1.41	1011	1117	
268-17-2420	20	80	1.47	1.70	1269	1412		
268-17-2424	24	80	1.58	1.96	1549	1692		

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 @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	
Shielded Pair #18 AWG.....	25
Shielded Pair #16 AWG.....	29

