



RADIAFLEX® RCF1/2" and 7/8" Cables

Specially designed for underground mining telecommunications applications

RADIAFLEX®

RCF12-50 & RCF78 Cables

These low loss foam dielectric cables combine excellent electrical characteristics with robust mechanical performance. They feature a remarkable flexibility with high strength and superior electrical performance. The cable construction allows easy handling and easy preparation for attachment of connectors together with high resistance to connector pull-off. Both cables utilize a flame retardant jacket.

RCF Cables...

...function as distributed antennas to provide communications in tunnels, mines and large building complexes and is the solution for any application in confined areas.

Slots in the copper and aluminum outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length. Designed for low coupling loss with the benefit of no stop bands. This facilitates excellent underground signal radiation.

RADIAFLEX® is used for both one-way and two-way communication systems and, because of its broadband capability, a single radiating cable can handle multiple communication systems simultaneously.

- **Cable meets MSHA requirements approved for U.S. mining applications**
- **Broadband Communication from 30 to 6000MHz**
Supports FM, VHF, UHF, Cellular, PCS, WiFi, WiMAX, 3G and 4G technologies
- **Typically deployed in mines, vehicles and in-building**
Designed for broad application
- **Used for both one- and two-way communication systems**
- **Best combination of flexibility, high strength and excellent electrical performance**
Rugged for harsh environments such as coal mines
- **Low bending radii**
- **Manufactured and stocked in the U.S.A.**
- **Copper and Aluminum**

RFS Technologies Connectors and Accessories for Easy Installation

Hoisting Grip



N Male Connectors



Cable Trim Tool



Broadband Communication from 30-6000MHz

Product Specifications

Model Number	RCF12-50JFN	RCF12-50JFNAL	RCF78-50JFNA	RCF78-50JFNAL
Size	1/2"	1/2"	7/8"	7/8"
Maximum Frequency, MHz	6000	6000	3800	3800
Jacket	Flame Retardant	JFN	JFN	JFN
Slot Design	Milled (Two-Row)	Milled (Two-Row)	Milled (Two-Row)	Milled (Two-Row)
Impedance, ohm	50 +/-2	50 +/-2	50 +/- 2	50 +/- 2
Velocity of Propagation, %	88	86	89	88
Inner Conductor dc Resistance, ohm/1000 m (1000 ft)	1.57 (0.48)	1.57 (0.48)	1.54 (0.47)	2.3 (0.7)
Outer Conductor dc Resistance, ohm/1000 m (1000 ft)	2.23 (0.68)	3.2 (0.98)	1.74 (0.53)	1.9 (0.58)
Outer Conductor Material	Annularly Corrugated Copper	Corrugated Aluminum Tube	Annularly Corrugated Copper	Corrugated Aluminum Tube
Inner Conductor Material	Copper-Clad Aluminum Wire	Copper Tube	Copper Tube	Copper Tube
Diameter over Jacket, mm (in)	16.2 (0.64)	16 (0.63)	27.8 (1.09)	28 (1.1)
Diameter Outer Conductor, mm (in)	13.8 (0.54)	13.8 (0.54)	25.2 (0.99)	25.2 (0.99)
Diameter Inner Conductor, mm (in)	4.8 (0.19)	4.8 (0.19)	9.3 (0.37)	9.4 (0.37)
Minimum Bending Radius, Single Bend, mm (in)	125 (5)	125 (4.9)	250 (10)	250 (10)
Cable Weight, kg/m (lb/ft)	0.22 (0.15)	0.22 (0.15)	0.6 (0.4)	
Tensile Force, N (lb)	1000 (225)	1100 (247)	1440 (317)	1400 (315)
Indication of Slot Alignment	None	None	None	None
Storage Temperature, °C (°F)	-70 to +85 (-94 to +185)	-10 to 50 (14 to 122)	-70 to 85 (-94 to 185)	-10 to 50 (14 to 122)
Installation Temperature, °C (°F)	-25 to +60 (-13 to +140)	-25 to 60 (-13 to 140)	-25 to 60 (-13 to 140)	-25 to 60 (-13 to 140)
Operation Temperature, °C (°F)	-50 to +85 (-58 to +185)	-40 to 85 (-40 to 185)	-40 to 85 (-40 to 185)	-40 to 85 (-40 to 185)
Stop bands, MHz	None	None	None	None
Recommended Clamp Spacing, m (ft)	0.6 (2.0)	0.6 (2.0)	0.9 (3)	0.9 (3)
Minimum Distance to Wall, mm (in)	50 (2)	50 (1.97)	50 (1.97)	50 (1.97)

Superior Cable Design

- Low attenuation cables such as RCF12-50JFN enable greater distance between amplification points
- Low DC resistance attributed to solid copper clad aluminum inner conductor
- Broadband capabilities allow system to be upgraded as new technologies emerge

Offers Key Benefits

- Less active equipment (Reduced CAPEX & OPEX) = less annual maintenance requirements
- At intrinsically safe power levels RADIAFLEX can carry enough DC power to operate active in-line devices – even at 2.4GHz and wireless LAN frequencies
- Systems using RCF12-50JFN are “future-friendly” and can handle voice and data simultaneously on the same cable



Broadband Communication from 30-6000MHz

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