RCF12-50JFN
1/2" RADIAFLEX® RCF Cable

- RADIAFLEX® functions as a distributed antenna to provide communications in tunnels, mines and large building complexes and is the solution for any application in confined areas.
- Slots in the copper 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.
- 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.
- This RADIAFLEX® radiating cable utilize a low-loss cellular polyethylene foam dielectric and a corrugated copper outer conductor which offers a combination of remarkable flexibility, high strength and excellent electrical performance.

Feature / Benefits

- Broadband radiating cable supporting all wireless application between 75 MHz to 6000 MHz
- Ideally suited for application that require low bending radii
- Robust radiating cable operational under all enviromental conditions as e.g. harsh tunnels or mines

Technical features

GENERAL SPECIFICATIONS

Size	1/2

ELECTRICAL SPECIFICATIONS

Max. Operating Frequency	6000 MHz
Cable Type	RCF
Impedance	50 +/- 2
Velocity	88 percent
Capacitance	76pF/m (23.2pF/ft)
Inductance	0.19µH/m (0.058µH/ft)
DC-resistance inner conductor	1.57ohm/1000 m (0.48ohm/1000 ft)
DC-resistance outer conductor	3.48ohm/1000 m (1.06ohm/1000 ft)
Stop bands	None
Frequency Selection	600, 900, 1800/1900, 2200, 2400, 2500, 2700, 6000

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MECHANICAL SPECIFICATIONS

Jacket	JFN
Jacket Color	Standard Black, other colors on request
Jacket Description	Halogen free, non corrosive, flame retardant, low smoke, polyolefin
Slot Design	Milled (Two-Row)
Inner Conductor Material	Copper Clad Aluminum Wire
Outer Conductor Material	Corrugated Copper Tube
Diameter Inner Conductor	4.8mm (0.19in)
Diameter Outer Conductor	13.8mm (0.54in)
Minimum Bending Radius	125mm (4.9in)
Cable Weight	0.22kg/m (0.15lb/ft)
Tensile Force	1100N (247lb)
Indication of Slot Alignment	None
Recommended / Maximum Clamp Spacing	0.6m (2ft)
Minimum Distance to Wall	50mm (1.97in)

TESTING AND ENVIRONMENTAL

Jacket Testing Methods	Test methods for fire behaviour of cable : IEC 60754-1/-2 smoke emission: halogen free, non corrosive IEC 61034 low smoke IEC 60332-1 flame retardant

TEMPERATURE SPECIFICATIONS

Storage Temperature	-70°C to 85°C (-94°F to 185°F)
Installation Temperature	-25°C to 60°C (-13°F to 140°F)
Operation Temperature	-40°C to 85°C (-40°F to 185°F)

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ATTENUATION AND POWER RATING

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	2.20 (0.67)	50	62
150	3.15 (0.96)	59	71
450	5.70 (1.74)	67	79
800	7.83 (2.39)	67	79
870	8.25 (2.51)	66	79
900	8.40 (2.56)	66	78
960	8.65 (2.64)	66	78
1800	13.1 (3.99)	68	80
1900	13.6 (4.15)	69	81
2000	14.0 (4.27)	72	84
2200	14.7 (4.48)	70	82
2400	15.3 (4.66)	70	82
2600	15.9 (4.85)	70	82
5000	24.8 (7.56)	75	87
5200	25.7 (7.83)	75	87
5800	27.6 (8.41)	75	87
6000	29.9 (8.81)	75	87

NOTES

- Coupling loss as well as longitudinal attenuation of RADIAFLEX® cables are measured by the free space method according to IEC 61196-4.
- Coupling loss values are average values of all three spatial orientations (radial, parallel and orthogonal) of dipole antenna.
- Coupling loss values are given with a tolerance of +10 dB and longitudinal loss values with a tolerance of +5%. Note: Measured values below nominal are better. They are not limited by any tolerance-range.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

Related Documents

WINS Value Proposition
Value Propositions