

1/2" RADIAFLEX® RSF Cable

Product Description

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, an inner conductor wire and a corrugated copper outer conductor which offers a combination of superior flexibility, high strength and excellent electrical performance.

Features/Benefits

- Broadband from 30 MHz to 6 GHz
- Physical properties similar to the CELLFLEX® cable family of type SCF
- Robust cable
- Low bending radii
- Main applications: in-building, vehicles, mines

Technical Specifications

Size:	[in]	1/2"
Max. operating frequency:	[MHz]	6000
Cable Type:		RSF
Jacket	JFN: halogen free, non corrosive, flame retardant, low smoke, polyolefin 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	
Slot Design	Milled (Two-Row)	
Previous Model Number		
Impedance	[Ω]	50 +/-2
Relative propagation velocity	[%]	82
Capacitance	[pF/m (pF/ft)]	82 (25.0)
Inductance	[μH/m (μH/ft)]	0.207 (0.063)
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	2.9 (0.89)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	4.0 (1.22)
Outer Conductor Material	Corrugated Copper Tube	
Inner Conductor Material	Copper Clad Aluminum Wire	
Diameter over Jacket	[mm (in.)]	13.7 (0.54)
Diameter Outer Conductor	[mm (in.)]	12.3 (0.48)
Diameter Inner Conductor	[mm (in.)]	3.6 (0.14)
Minimum Bending Radius, Single Bend	[mm (in.)]	32 (1.3)
Cable Weight	[kg/m (lb/ft)]	0.25 (0.16)
Max. tensile force	[N (lb)]	600 (135)
Indication of Slot Alignment	None	
Storage temperature	[°C (°F)]	-70 to +85 (-94 to +185)
Installation temperature	[°C (°F)]	-25 to +60 (-13 to +140)
Operation temperature	[°C (°F)]	-40 to +85 (-40 to +185)
Stop bands	[MHz]	None
Recommended / maximum clamp spacing	[m (ft)]	0.3 (1.0)
Minimum Distance to Wall	[mm (in.)]	50 (2)
Length	[m (ft)]	

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%.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

Rev.

2008/08/26



RSF cable

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	3,35 (1,02)	48	59
150	4,85 (1,48)	62	73
450	8,80 (2,68)	67	76
800	12,09 (3,68)	72	84
870	12,67 (3,86)	73	85
900	12,90 (3,93)	73	84
960	13,35 (4,07)	73	85
1800	19,25 (5,87)	71	81
1900	19,70 (5,99)	68	80
2000	20,55 (6,26)	66	77
2200	23,00 (7,01)	65	76
2400	23,40 (7,12)	67	78

Standard conditions