



RLK cable, A-series

7/8" RADIAFLEX® RLK Cable, A-series

- 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 smooth copper outer conductor which offers a superior electrical performance together with good bending properties.

FEATURES / BENEFITS

- Broadband from 30 MHz to 980 MHz
- For applications in tunnels and buildings
- A Low coupling loss variations

Technical Features

GENERAL SPECIFICATIONS

| Size7/8°ELECTRICAL SPECIFICATIONSELECTRICAL SPECIFICATIONSMax. Operating FrequencyMHz98.0Cable TypeRLKImpedanceOhm50 +/- 2Velocity%89.0CapacitancepF/m (pF/n)76 (22.9)InductanceµH/m (µH/t)0.1875 (0.057)DC-resistance inner conductorΩ/km (Ω/1000ft)1.74 (0.53)DC-resistance outer conductorΩ/km (Ω/1000ft)2.52 (0.77)Stop bandsMHz30-375, 650-685MECHANICAL SPECIFICATIONSJFNJacketJFNJacket DescriptionGJFNJacket DescriptionGGroups of vertical slots at short intervalsOuter Conductor MaterialCopper TubeOuter Conductor MaterialGSo (3.37)Diameter Outer Conductormm (m)3.8 (0.94)Diameter Outer Conductormm (m)3.9 (0.37)Imamus Bending Radiusmm (m)2.55 (0.37)Cable Weightkg/m (lb/t)0.55 (0.37)Indication of Stot AlignmentKg/m (lb/t)0.50 (3.8)Recommened Clamp Spacingm (m)80 (3.15)Indication of Stot AlignmentSu (3.5)Euser Euser Eu | | | | | | |
|--|-------------------------------|-----------------|--|--|--|--|
| Max. Operating FrequencyMHz980.0Cable TypeRLKImpedanceOhm50 4/- 2Velocity%89.0CapacitancepF/m (pF/th)75 (22.9)InductanceµH/m (µH/th)0.1875 (0.057)DC-resistance outer conductorO/km (Q/1000th)1.74 (0.53)DC-resistance outer conductorO/km (Q/1000th)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacketJFNJacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinSlot DesignCorper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)350 (13.8)Cable Weightkg/m (lb/th)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AllignmentBulge atop slotsRecommended Clamp Spacingm (th)0.9 (3)Minimum Bistance to Wallmm (m)80 (3.15)TEMPERATURE SPECIFICATIONS | Size | | 7/8" | | | |
| Cable TypeRLKImpedanceOhm50 +/- 2Velocity%89.0CapacitancepF/m (P/fft)75 (22.9)InductanceµH/m (µH/ft)0.1875 (0.057)DC-resistance outer conductorΩ/km (Ω/1000ft)1.74 (0.53)DC-resistance outer conductorΩ/km (Ω/1000ft)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJENJacketJFNJacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinStop bandsOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter Outer Conductormm (in)23.8 (0.94)Diameter Outer Conductormm (in)23.0 (37)Diameter Outer Conductormm (in)23.0 (37)Dia | ELECTRICAL SPECIFICATIONS | | | | | |
| ImpedanceOhm50 +/- 2Velocity%89.0CapacitancepF/m (pF/ft)75 (22.9)InductanceµH/m (µH/ft)0.1875 (0.057)DC-resistance inner conductorΩ/km (Ω/1000ft)1.74 (0.53)DC-resistance outer conductorΩ/km (Ω/1000ft)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacketJFNJacket DescriptionGroups of vertical slots at short intervalsInner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter over Jacketmm (in)3.8 (0.94)Diameter over Jacketmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indiction of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimus Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS-70 to 85 (-94 to 185) | Max. Operating Frequency | MHz | 980.0 | | | |
| Velocity%89.0CapacitancepF/m (pF/ft)75 (22.9)InductanceµH/m (µH/ft)0.1875 (0.057)DC-resistance inner conductorΩ/km (Ω/1000ft)1.74 (0.53)DC-resistance outer conductorΩ/km (Ω/1000ft)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacketJFNJacket DescriptionMHzStop bandsGroups of vertical slots at short intervalsInner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulga atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS%C(°F)-70 to 85 (-94 to 185) | Cable Type | | RLK | | | |
| CapacitancepF/m (pF/t)75 (22.9)InductanceμH/m (μH/t)0.1875 (0.057)DC-resistance inner conductorΩ/km (Ω/1000t)1.74 (0.53)DC-resistance outer conductorΩ/km (Ω/1000t)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacket DescriptionJFNJacket DescriptionGroups of vertical slots at short intervalsInner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Outer Conductormm (in)28. (0.34)Diameter Outer Conductormm (in)28. (0.37)Tensile ForceN (b)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (in)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONSStorage Temperature°C(°F)Ot Col Conductor% °C(°F)-70 to 85 (-94 to 185) | Impedance | Ohm | 50 +/- 2 | | | |
| InductanceμH/m (μH/t)0.1875 (0.057)DC-resistance inner conductorΩ/km (Ω/1000ft)1.74 (0.53)DC-resistance outer conductorΩ/km (Ω/1000ft)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacketJFNJacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinStot DesignGroups of vertical slots at short intervalsInner Conductor MaterialOverlapping Copper TubeOuter Conductormm (in)9.3 (0.37)Diameter Inner Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)350 (13.8)Cable Weightkg/m (b/t1)0.55 (0.37)Tensile ForceN (b)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS*C(°F)-70 to 85 (-94 to 185) | Velocity | % | 89.0 | | | |
| DC-resistance inner conductorΩ/km (Ω/1000ft)1.74 (0.53)DC-resistance outer conductorΩ/km (Ω/1000ft)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacketJFNJacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinStop bandsGroups of vertical slots at short intervalsInner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS | Capacitance | pF/m (pF/ft) | 75 (22.9) | | | |
| DC-resistance outer conductorΩ/km (Ω/1000ft)2.52 (0.77)Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacketJFNJacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinSlot DesignGroups of vertical slots at short intervalsInner Conductor MaterialOverlapping Copper StripOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter Outer Socketmm (in)850 (1.2)Minimum Bending Radiusmm (in)850 (1.38)Cable Weightkg/m (lb/ft)1ndication of Slot AlignmentN (lb)Recommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONSStorage Temperature°C(°F)*CreftStorage Temperature*Creft <t< th=""><th>Inductance</th><th>μH/m (μH/ft)</th><th>0.1875 (0.057)</th></t<> | Inductance | μH/m (μH/ft) | 0.1875 (0.057) | | | |
| Stop bandsMHz300-375, 650-685MECHANICAL SPECIFICATIONSJacketJENJacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinSlot DesignGroups of vertical slots at short intervalsInner Conductor MaterialOverlapping Copper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS*70 to 85 (-94 to 185) | DC-resistance inner conductor | Ω/km (Ω/1000ft) | 1.74 (0.53) | | | |
| MECHANICAL SPECIFICATIONS Jacket JFN Jacket Description Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin Slot Design Groups of vertical slots at short intervals Inner Conductor Material Copper Tube Outer Conductor Material Overlapping Copper Strip Diameter Inner Conductor mm (in) 9.3 (0.37) Diameter Outer Conductor mm (in) 23.8 (0.94) Diameter over Jacket mm (in) 28.5 (1.12) Minimum Bending Radius mm (in) 350 (13.8) Cable Weight kg/m (lb/ft) 0.55 (0.37) Tensile Force N (lb) 2300 (507) Indication of Slot Alignment Bulge atop slots Recommended Clamp Spacing m (ft) 0.9 (3) Minimum Distance to Wall mm (in) 80 (3.15) TEMPERATURE SPECIFICATIONS Storage Temperature °C(°F) | DC-resistance outer conductor | Ω/km (Ω/1000ft) | 2.52 (0.77) | | | |
| JacketJFNJacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinSlot DesignGroups of vertical slots at short intervalsInner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONSStorage Temperature°C(°F)°C(°F)-70 to 85 (-94 to 185) | Stop bands | MHz | 300-375, 650-685 | | | |
| Jacket DescriptionHalogen free, non corrosive, flame and fire retardant, low smoke, polyolefinSlot DesignGroups of vertical slots at short intervalsInner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS°C(°F)-70 to 85 (-94 to 185) | MECHANICAL SPECIFICATIONS | | | | | |
| Slot DesignGroups of vertical slots at short intervalsInner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONSStorage Temperature°C(°F)-70 to 85 (-94 to 185) | Jacket | | JFN | | | |
| Inner Conductor MaterialCopper TubeOuter Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS°C(°F)-70 to 85 (-94 to 185) | Jacket Description | | Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin | | | |
| Outer Conductor MaterialOverlapping Copper StripDiameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS°C(°F)-70 to 85 (-94 to 185) | Slot Design | | Groups of vertical slots at short intervals | | | |
| Diameter Inner Conductormm (in)9.3 (0.37)Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS°C(°F)-70 to 85 (-94 to 185) | Inner Conductor Material | | Copper Tube | | | |
| Diameter Outer Conductormm (in)23.8 (0.94)Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONS°C(°F)-70 to 85 (-94 to 185) | Outer Conductor Material | | Overlapping Copper Strip | | | |
| Diameter over Jacketmm (in)28.5 (1.12)Minimum Bending Radiusmm (in)350 (13.8)Cable Weightkg/m (lb/ft)0.55 (0.37)Tensile ForceN (lb)2300 (507)Indication of Slot AlignmentBulge atop slotsRecommended Clamp Spacingm (ft)0.9 (3)Minimum Distance to Wallmm (in)80 (3.15)TEMPERATURE SPECIFICATIONSStorage Temperature°C(°F)-70 to 85 (-94 to 185) | Diameter Inner Conductor | mm (in) | 9.3 (0.37) | | | |
| Minimum Bending Radius mm (in) 350 (13.8) Cable Weight kg/m (lb/ft) 0.55 (0.37) Tensile Force N (lb) 2300 (507) Indication of Slot Alignment Bulge atop slots Recommended Clamp Spacing m (ft) 0.9 (3) Minimum Distance to Wall mm (in) 80 (3.15) TEMPERATURE SPECIFICATIONS Storage Temperature °C (°F) -70 to 85 (-94 to 185) | Diameter Outer Conductor | mm (in) | 23.8 (0.94) | | | |
| Cable Weight kg/m (lb/ft) 0.55 (0.37) Tensile Force N (lb) 2300 (507) Indication of Slot Alignment Bulge atop slots Recommended Clamp Spacing m (ft) 0.9 (3) Minimum Distance to Wall mm (in) 80 (3.15) TEMPERATURE SPECIFICATIONS Storage Temperature °C(°F) -70 to 85 (-94 to 185) | Diameter over Jacket | mm (in) | 28.5 (1.12) | | | |
| Tensile Force N (lb) 2300 (507) Indication of Slot Alignment Bulge atop slots Recommended Clamp Spacing m (ft) 0.9 (3) Minimum Distance to Wall mm (in) 80 (3.15) TEMPERATURE SPECIFICATIONS Storage Temperature °C(°F) -70 to 85 (-94 to 185) | Minimum Bending Radius | mm (in) | 350 (13.8) | | | |
| Indication of Slot Alignment Bulge atop slots Recommended Clamp Spacing m (ft) 0.9 (3) Minimum Distance to Wall mm (in) 80 (3.15) TEMPERATURE SPECIFICATIONS Storage Temperature °C(°F) -70 to 85 (-94 to 185) | Cable Weight | kg/m (lb/ft) | 0.55 (0.37) | | | |
| Recommended Clamp Spacing m (ft) 0.9 (3) Minimum Distance to Wall mm (in) 80 (3.15) TEMPERATURE SPECIFICATIONS Storage Temperature °C(°F) -70 to 85 (-94 to 185) | Tensile Force | N (lb) | 2300 (507) | | | |
| Minimum Distance to Wall mm (in) 80 (3.15) TEMPERATURE SPECIFICATIONS Storage Temperature °C(°F) -70 to 85 (-94 to 185) | Indication of Slot Alignment | | Bulge atop slots | | | |
| TEMPERATURE SPECIFICATIONS Storage Temperature °C(°F) -70 to 85 (-94 to 185) | Recommended Clamp Spacing | m (ft) | 0.9 (3) | | | |
| Storage Temperature °C(°F) -70 to 85 (-94 to 185) | Minimum Distance to Wall | mm (in) | 80 (3.15) | | | |
| | TEMPERATURE SPECIFICATIONS | | | | | |
| | Storage Temperature | °C(°F) | -70 to 85 (-94 to 185) | | | |
| Installation Lemperature °C(°F) -25 to 60 (-13 to 140) | Installation Temperature | °C(°F) | -25 to 60 (-13 to 140) | | | |
| Operation Temperature °C(°F) -40 to 85 (-40 to 185) | Operation Temperature | °C(°F) | -40 to 85 (-40 to 185) | | | |

RLK78-50JFNA



All information contained in the present datasheet is subject to confirmation at time of ordering



7/8" RADIAFLEX® RLK Cable, A-series

| | Longitudinal | Coupling Loss | | TESTING AND ENVIRONMENTAL | | | |
|--------|-------------------------------|---------------|-----------|--|---|--|--|
| MHz | loss dB/100m (dB/100ft) | 50%, dB | 95%, dB | Jacket Testing Methods | Test methods for fire behaviour of cable : IEC 60754-1/-2 smoke emission: halogen free, non corrosive IEC 61034 low smoke | | |
| 75 | 1.08 (0.33) | 46 (50) | 58 (60) | - | IEC 60332-1 flame retardant | | |
| 150 | 1.56 (0.48) | 54 (58) | 66 (69) | | IEC 60332-3-24 fire retardant UL1666, ASTM E 662, NES711 and NES713 | | |
| 380 | 2.69 (0.81) | 53 (55) | 57 (59) | | | | |
| 400 | 2.70 (0.82) | 53 (55) | 57 (59) | - | | | |
| 450 | 2.90 (0.88) | 52 (55) | 56 (59) | | | | |
| 470 | 2.97 (0.91) | 52 (55) | 56 (59) | - | | | |
| 500 | 3.10 (0.94) | 52 (55) | 56 (59) | | | | |
| 800 | 4.35 (1.33) | 55 (58) | 59 (62) | - | | | |
| 870 | 4.90 (1.49) | 56 (59) | 61 (64) | | | | |
| 900 | 5.05 (1.54) | 57 (60) | 62 (65) | | | | |
| 960 | 5.19 (1.58) | 57 (60) | 62 (65) | | | | |
| xterna | Documen | t Links | Note ⊖ | | attenuation of RADIAFLEX® cables are measured by the free space | | |
| | | | Θ | method according to IEC 61196-4. Coupling loss values are measured with a radial (below 330 MHz) or parallel (above 330 MHz) orientated | | | |
| | | | Θ | dipole antenna. | ckets are average values of all three spatial orientations (radial, parallel | | |
| | | | Θ | and orthogonal) of dipole antenna. | tolerance of +10 dB and longitudinal loss values with a tolerance of +5 | | |
| | | | ∂ | Note: Measured values below nomina | a are better. They are not limited by any tolerance-range. d stop band, please contact RFS for further assistance. | | |
| | | | ĕ | • | rmance in building or tunnel environments may deviate from figures bas | | |
| | | | | | | | |

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