

C Series RF Connectors

Aptiv's C Series RF connector is a medium-sized, weatherproof coaxial connector known for its robust construction and bayonet coupling mechanism. Developed for use in outdoor and demanding industrial environments, the C Series provides reliable connections in applications where moisture, vibration, and temperature fluctuations are a concern. While not designed for the highest frequencies, it offers excellent performance up to 10 GHz, making it suitable for a range of telecommunications, broadcast, and industrial RF systems. Its secure locking mechanism ensures stable electrical contact even under adverse conditions, making it a dependable choice for general-purpose applications requiring a sealed interface.



KEY FEATURES & BENEFITS

- **Bayonet Coupling Mechanism:** Provides quick, positive, and secure locking with a quarter-turn, enabling rapid connection and disconnection.
- **Weatherproof/Sealed Design:** Engineered to resist moisture and environmental ingress, making it ideal for outdoor and harsh industrial applications.
- **Robust Construction:** Features a sturdy design for enhanced durability and reliable performance in challenging conditions.
- **Medium Frequency Range:** Capable of operating up to 10 GHz, suitable for a broad array of low to mid-frequency RF systems.
- **50 Ohm Impedance:** Standardized at 50 Ohms, ensuring compatibility with most common RF and microwave systems.
- **Reliable Performance:** Offers stable electrical characteristics with good VSWR and insertion loss, maintaining signal integrity in various environments.
- **Versatile Termination Options:** Available in various configurations including straight, right-angle, and bulkhead mounts, with solder, crimp, or clamp termination styles.

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PRODUCT SPECIFICATIONS

Electrical Properties	
Impedance	50 Ohms
Frequency Range	DC to 10 GHz
Voltage Rating	1000 VRMS (max.)
Dielectric Withstanding Voltage	2500 VRMS (min.)
Contact Resistance (Center)	$\leq 1.5 \text{ m}\Omega$
Contact Resistance (Outer)	$\leq 1.0 \text{ m}\Omega$
Insulation Resistance	$\geq 5000 \text{ M}\Omega$
VSWR (Typical)	$\leq 1.30 @ 6 \text{ GHz}; \leq 1.50 @ 10 \text{ GHz}$
Insertion Loss	$\leq 0.1 \text{ dB @ 6 GHz (typical)}$
RF Leakage	$\geq -60 \text{ dB @ 3 GHz (typical)}$
RF Leakage	$\geq -55 \text{ dB @ 3 GHz (typical for 50 Ohm)}$

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PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties	
Coupling Mechanism	Bayonet
Mating Cycles	≥ 500 cycles
Coupling Nut Retention	100 lbs min.
Cable Retention (typical)	Varies by cable type and termination method (e.g., 60-100 lbs for clamp types)
Body Material	Brass or Stainless Steel (typically nickel or passivated)
Center Contact Material	Beryllium Copper or Brass (typically gold plated)
Insulator Material	PTFE (Polytetrafluoroethylene)
Interface Dimensions	Conforms to MIL-STD-348, Interface 302

PRODUCT SPECIFICATIONS CONTD.

Environmental Properties	
Temperature Range	-65°C to +165°C (standard operating range)
Thermal Shock	MIL-STD-202, Method 107, Test Condition B (from -65°C to +165°C)
Vibration	MIL-STD-202, Method 204, Test Condition B (15 G's)
Shock	MIL-STD-202, Method 213, Test Condition I (100 G's)
Moisture Resistance	MIL-STD-202, Method 106 (sealed design provides excellent protection)
Corrosion (Salt Fog)	MIL-STD-202, Method 101, Test Condition B (48 hours)
Durability	Engineered for reliable performance in harsh outdoor and industrial environments, ensuring long-term operational integrity.