

N Series Connectors

Winchester's N Series (Type N) is a medium-sized, threaded RF coaxial connector known for its robust construction, high reliability, and excellent performance up to 18 GHz, with precision versions reaching 26.5 GHz. Developed in the 1940s by Paul Neill at Bell Labs, it was a pioneering connector for microwave frequencies. Its threaded coupling ensures a secure, vibration-proof, and weather-resistant connection, making it ideal for demanding outdoor applications. The N Series is widely used in antennas, base stations, radar, and test and measurement instruments.



KEY FEATURES & BENEFITS

- Extended Frequency Range – Operates dependably up to 50 GHz for wide-ranging microwave and millimeter-wave applications.
- Weatherproof Design: Weather-sealed and highly suitable for exposed environments.
- Precision Threaded Coupling – Provides stable, vibration-resistant connections for consistent high-frequency performance.
- Excellent Electrical Characteristics – Low VSWR and minimal insertion loss due to precision air dielectric construction.
- 50 Ohm Standard Impedance – Ensures seamless compatibility with RF and microwave systems.
- Durable Construction: Made with passivated brass or stainless steel and nickel or gold plating, offering exceptional durability.
- Versatile Options: Available in straight and right-angle, with solder, crimp, or clamp termination styles.

PRODUCT SPECIFICATIONS

Electrical Properties*	
Impedance	50 Ohms (standard); 75 Ohms (for specific video/broadcast applications)
Frequency Range	DC to 11 GHz (standard); DC to 18 GHz or 26.5 GHz (precision/high-performance versions)
Voltage Rating	100 VRMS (max.)
Dielectric Withstanding Voltage	2500 VRMS (min.)
Contact Resistance	Center Contact: $\leq 1.0 \text{ m}\Omega$ (typical) Outer Contact: $\leq 0.5 \text{ m}\Omega$ (typical)
Insulation Resistance	$\geq 5000 \text{ M}\Omega$
VSWR (Voltage Standing Wave Ratio)	50 Ohm (Standard): Typical ≤ 1.30 @ 11 GHz 50 Ohm (Precision): Typical ≤ 1.20 @ 18 GHz
Insertion Loss	$\leq 0.1 \text{ dB}$ @ 6 GHz (typical)
RF Leakage	$\geq -90 \text{ dB}$ @ 3 GHz (typical)

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Environmental Properties*	
Temperature Range	-65°C to +165°C (standard)
Thermal Shock	MIL-STD-202, Method 107, Test Condition B, (from -65°C to +200°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
Corrosion (Salt Fog)	MIL-STD-202, Method 101, Test Condition B (48 hours)
Durability	Engineered for reliable performance in various environmental conditions common to industrial, commercial, and military applications, particularly outdoor.

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties*	
Coupling Mechanism	Threaded (5/8"-24 UNEF-2A thread)
Mating Cycles	≥ 500 cycles (standard); higher for test-grade
Recommended Mating Torque	15 - 20 in-lbs (use calibrated torque wrench for best performance)
Cable Retention	Varies by cable type & termination (crimp, solder, clamp)
Body Material	Stainless Steel (typically passivated for corrosion resistance)
Center Contact Material	Beryllium Copper, Phosphor Bronze, or Brass (typically gold plated)
Dielectric/Insulator Material	PTFE (Polytetrafluoroethylene)
Interface Dimesions	Conforms to MIL-STD-348

*reference website for specific part number specifications