Amphenol[®]Connex A New Kind of RF Solution

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Our Products

<u>7/16</u> **BNC** D-Sub FME <u>MCX</u> **MMCX** <u>SMA</u> <u>SMB</u> SMC TNC Twin BNC Type F Type N UHF

Between-Series Adapters **Shielded Terminations** Strain-Relief Boots Tools

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Type N connector series

Features & Benefits | Applications | Standard Specs | Corrugated Specs | Assembly Instructions

Named after Paul Neill of Bell Labs after being developed in the 1940's, the Type N offered the first true microwave performance. The Type N connector was developed to satisfy the need for a durable, weatherproof, medium-size RF connector with consistent performance through 11 GHz.

There are two families of Type N connectors: Standard N (coaxial cable) and Corrugated N (helical and annular cable). Their primary applications are the termination of medium to miniature size coaxial cable, including RG-8, RG-58, RG-141, and RG-225. RF coaxial connectors are the most important element in the cable system. Corrugated copper coaxial cables have the



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potential to deliver all the performance your system requires, but they are often limited by the performance of the connectors.

Intermodulation distortion, a major concern in today's communications systems, is consistently low with corrugated cable connectors. Typical performance is -125 dBm (-168 dBdc). In-house IMD measurement capability gives Amphenol the unique ability to understand the effects of connector design elements on IMD generation and to design the best performing connectors in the industry. Selfflaring designs are easily attached with standard hand tools in the field, and are highly resistant to pull off and twist off. All corrugated cable connectors are optimally matched to their cables for low VSWR and insertion loss.

Type N Coaxial Connectors

I

CRIMP/SOLDER AT	ACHMENTS FOR FLEXIBLE AND SEMI-RIGID CABLE
Straight Crimp Plug - Cap	tive Contact
Straight Solder Plug - Ser	ni-Rigid Cable
Crimp Plug - Ethernet Cal	ble
Right Angle Crimp Plugs	
Right Angle Solder Plug -	Semi-Rigid Cable
Straight Crimp Jack - Cap	tive Contact
Straight Solder Jack - Ser	ni-Rigid Cable
Bulkhead Crimp Jack - Ca	aptive Contact - Standard Cables
Bulkhead Solder Jack - S	emi-Rigid Cable
Bulkhead Crimp Jack - Et	hernet Cable
Bulkhead Clamp Jack - R	ear Mount - Miniature Cable
Bulkhead Clamp Jack - Fi	ront Mount- Miniature Cable
Straight Crimp Panel Jack	c- Captive Contact - Standard Cable
Straight Solder Panel Jac	k - Semi-Rigid Cable
	NTS FOR FLEXIBLE CABLE
Straight Solder Plug - Cap	<u>itive Contact</u>
Straight Solder Plug - Cap	<u>vtive Contact</u>
Straight Solder Jack - Cap	<u>ptive Contact</u>
Straight Solder Jack - Cap	ptive Contact
	SOLDER RECEPTACLES
Bulkhead Receptacle - Fr	
Bulkhead Receptacle - Fr	
PANEL MOUNT/SOL	DER RECEPTACLES
Panel Receptacle Jack - I	Exposed TFE Type
Panel Receptacle Plug - E	Exposed TFE Type
Panel Receptacle Plug - S	Solder Pot Terminal
Panel Receptacle Jack - S	Solder Pot Terminal
Panel Mount - Round Flar	nge
Panel Receptacle Plug - S	Slot Terminal

Panel Receptacle Jack - Slot Terminal

Panel Receptacle Jack - Extended Teflon

Panel Receptacle - Extended Body

Panel Receptacle- Extended Body - Post Contact

Panel Receptacle - Tab Post

Printed Circuit Board Receptacle

Press Fit Receptacle

Right Angle Printed Circuit Board Receptacle

FEEDTHROUGH ADAPTERS

Plug-To-Plug Adapter

Jack-To-Jack Adapter

Jack-To-Jack Bulkhead Adapter

TEE ADAPTERS/ANGLE ADAPTERS

Tee Adapter - Jack-To-Plug-To-Jack

Tee Adapter - Jack-To-Jack-To-Jack

Tee Adapter - Plug-To-Jack-To-Jack

Angle Adapter - Plug-To-Jack

Angle Adapter - Plug-To-Plug

TERMINATORS

N Terminator Plug

N Terminator Jack

ACCESSORIES

N Male Cap & Chain

Features & Benefits

- Accommodates a wide range of medium to miniature-sized RG coaxial cables in a rugged medium-sized design
- Broad line of Military (M39012), Industrial (UG) and Commercial (RFX) grade products available, giving customers choices in weighing cost versus performance benefits
- Meets many customer application demands with plug styles available in straight and right angle and jack styles available in panel mount, bulkhead mount, and receptacle

Applications

- Antennas
- Cable assemblies
- Instrumentation
- PCS
- Satcom

- Base stations
- Cellular
- Microwave Radio
- Radar
- Surge Protection
- Broadcast
- Components
- Mil-Aero
- Radios
- WLAN

Type N Standard Specifications

mpedance	50 Ω	
Frequency Range	0 - 11 GHz	
Voltage Rating	1,500 volts peak	
VSWR	MIL-C-39012 straight connectors: 1.3 max 0-11 GHz MIL-C-39012 right angle connectors: 1.35 max 0-11 GHz	
Dielectric Withstanding Voltage	2,500 volts rms	
Insulation Resistance	5,000 MΩ minimum	
Center Contact Resistance	1.0 mΩ	
Outer Contact Resistance	0.2 mΩ	
RF Leakage	-90 dB minimum at 3 GHz	
Insertion Loss	.15 dB maximum at 10 GHz	

Mating	5/8-24 threaded coupling			
Braid or Jacket Cable Affixment	All crimps: hex braid crimp			
	Clamps: screw-thread nut and braid clamp			
Center Conductor Cable Affixment	Crimp: crimp or solder			
	All others: solder only			
Captivated Contact	All crimps unless specified otherwise			
Cable Retention	Crimps: 60-120 lbs Clamps: 30-70 lbs			
Material				
Male Contacts	Brass, silver or gold plated			
Female Contacts	Phosphorous bronze or beryllium copper, silver or gold plated			
Other Metal Parts	Brass with ASTROplate® finish; M39012 has silver finish			
Insulators	TFE, copolymer of styrene or glass-TFE (hermetic seal)			
Weatherproof Gaskets	Silicone rubber of synthetic rubber			
Crimp Ferrule	Copper			
Environmental				
· · ·	TFE: -65°C to +165°C			
Environmental Temperature Range	TFE: -65°C to +165°C All series N with gaskets are weatherproof			
Environmental Temperature Range Weatherproof				
Environmental Temperature Range Weatherproof Hermetic Seals	All series N with gaskets are weatherproof			
Environmental Temperature Range Weatherproof Hermetic Seals Pressurized Shock	All series N with gaskets are weatherproof Pass helium leak test of 2x10-8 cc/sec			
Environmental Temperature Range Weatherproof Hermetic Seals Pressurized Shock Vibration	All series N with gaskets are weatherproof Pass helium leak test of 2x10-8 cc/sec Compression seal MIL-STD-202, method 213			
Environmental Temperature Range Weatherproof Hermetic Seals Pressurized Shock Vibration	All series N with gaskets are weatherproof Pass helium leak test of 2x10-8 cc/sec Compression seal MIL-STD-202, method 213 MIL-STD-202, method 204, test condition B			
Environmental Temperature Range Weatherproof Hermetic Seals Pressurized Shock Vibration Moisture Resistance Corrosion	All series N with gaskets are weatherproof Pass helium leak test of 2x10-8 cc/sec Compression seal MIL-STD-202, method 213 MIL-STD-202, method 204, test condition B MIL-STD-202, method 106			
Environmental Temperature Range Weatherproof Hermetic Seals Pressurized Shock Vibration Moisture Resistance	All series N with gaskets are weatherproof Pass helium leak test of 2x10-8 cc/sec Compression seal MIL-STD-202, method 213 MIL-STD-202, method 204, test condition B MIL-STD-202, method 106 MIL-STD-202, method 101, test condition B			
Environmental Temperature Range Weatherproof Hermetic Seals Pressurized Shock Vibration Moisture Resistance Corrosion Temperature Cycling	All series N with gaskets are weatherproof Pass helium leak test of 2x10-8 cc/sec Compression seal MIL-STD-202, method 213 MIL-STD-202, method 204, test condition B MIL-STD-202, method 106 MIL-STD-202, method 101, test condition B MIL-STD-202, method 102, test condition C			

Note: These characteristics are typical but may not apply to all connectors.

Corrugated Type N Specifications

Electrical				
Impedance	50 Ω			
Frequency Range	11.0 GHz			
Return Loss	33 dB (1-2 GHz) 28 dB (2-3 GHz)			
Operating Voltage	Maximum 707 rms			
Dielectric Withstanding Voltage	2,000 vdc			
Insulation Resistance	5,000 MΩ minimum			
Insertion Loss	.05 frequency GHz			
Shielding Effectiveness	Minimum 125 dB			
Peak Power	Maximum 10 kW			
Average Power	Maximum .60 kW			
3rd Order IM Product	Typical -125 dBm (-168 dBc)			
Mechanical				
Mating	MIL-STD-348			
Inner Attachment Method	Solder or captivated			
Outer Attachment Method	Compression			
Assembly Torque	18/22 lb-ft (25/30 N-m)			
Coupling Torque	15.00 lb-in (1.70 N-m)			
Coupling Nut Retention Force	100.00 lbs (444.80 N)			
Connector Durability	500 cycles, 12 cycles/minute			
Material				
Body	Brass, silver plated			