

# TYPE N



**Type N Connectors**

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### **Description**

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 18 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.

### **Features/Benefits**

- Accommodates a wide range of medium to miniature-sized RG coaxial cables in a rugged medium-sized design.
- 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
- Base Stations
- Broadcast
- Instrumentation
- Microwave Radio
- Mil-Aero
- PCS
- Radar
- Radios
- Satellite Communications
- Surge Protection
- WLAN

## Type N Specifications

### Electrical

Impedance	50 $\Omega$
Frequency range	DC - 11 GHz (flexible cable) DC - 18 GHz (semi-rigid)
VSWR	1.3 max. @ DC - 11 GHz (straight) 1.35 max. @ DC - 11 GHz (right-angle)
RF-leakage	90 dB minimum @ 3 GHz
Voltage rating (at sea level)	$\leq$ 1,500 V peak (depending on cable)
Contact resistance	center contact: $\leq$ 1 m $\Omega$ outer contact: $\leq$ 0.2 m $\Omega$
Insulation resistance	5,000 M $\Omega$ minimum
Insertion loss maximum	$\leq$ 0.15 dB @ 10 GHz
Dielectric withstanding voltage	2,500 Vrms (at sea level)

### Mechanical

Mating	5/8-24 Threaded coupling (MIL-STD-348)
Coupling torque, min./max.	15 inch lbs to max recommended
Coupling nut retention force	101.2 lbs (450N) min.
Assembly torque (body/clamp nut)	positive stop, 18/20 lb-ft (25/30 N-m)
Braid/Jacket cable affixment	All braid hex crimps, clamps: screw-thread and braid clamp
Center conductor cable affixment	Solder
Captivated contacts	All crimp, unless noted otherwise
Contact Captivation	6.3 lbs (28N) min.
Durability (matings)	500 cycles minimum

### Environmental

Temperature range	-65°C to +165°C
- copolymer of styrene:	-55°C to +85°C
Weatherproof	All series N with gaskets
Hermetic seals	Helium leak test, $2 \times 10^{-8}$ cc/sec.
Thermal shock	MIL-STD-202, method 107, cond. B
Moisture resistance	MIL-STD-202, method 106
Corrosion	MIL-STD-202, method 101, cond. B
Vibration	MIL-STD-202, method 204, cond. B
Mechanical shock	MIL-STD-202, method 213, cond. 1

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

## Type N Specifications (continued)

### Material

Male contact

Female contact

Crimp ferrule

Other metal parts

Insulator

Gasket

Brass, gold or silver plated

Phosphor bronze or beryllium copper, gold or silver plated

Copper or brass

Brass, nickel plated

PTFE, copolymer of styrene, glass TFE (herm. sealed)

Silicone or synthetic rubber (weatherproof)

### Military

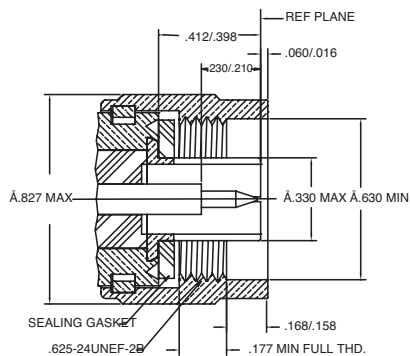
MIL-STD-348A

MIL-A-55339

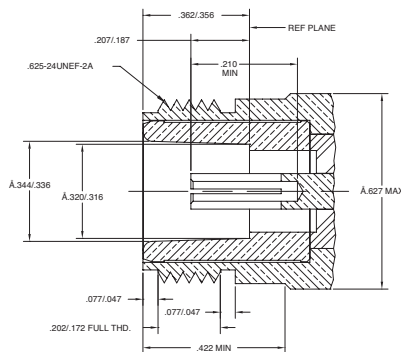
where applicable

where applicable

### Plug



### Jack

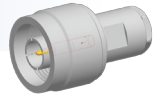




## Cable Connectors

### Straight Plugs

Cable		Plating		Termination	
Group	Part Number	Body	Contact	Body	Contact
B	082-6034	Nickel	Gold	Crimp	Crimp/Clamp
C	000-34025-536C	Nickel	Gold	Clamp	Solder
C	082-5375	Nickel	Gold	Crimp	Crimp
C	082-5375-RFX	Nickel	Gold	Crimp	Crimp
C	000-34025-RFX	Nickel	Gold	Clamp	Solder
C1	082-5370	Nickel	Gold	Crimp	Crimp
C1	082-4427 (QPL)	Silver	Gold	Crimp	Crimp
E	082-5380-RFX	Nickel	Gold	Crimp	Crimp
G2	082-6106	Nickel	Gold	Crimp	Crimp
G2	082-6152	Nickel	Gold	Crimp	Crimp
G3	082-340-1052	Nickel	Gold	Crimp	Crimp
G3	082-6142-1000	Silver	Gold	Crimp	Crimp
G3	082-202-1006	Nickel	Gold	Clamp	Solder
G4	082-340 (QPL)	Silver	Gold	Crimp	Crimp
G4	082-332 (QPL)	Silver	Gold	Crimp	Crimp
G4	082-4425-1003	Silver	Gold	Crimp	Crimp
G4	082-4425 (QPL)	Silver	Gold	Crimp	Crimp
G4	082-4426-11RFX	Nickel	Gold	Crimp	Crimp
G4	082-3202	Nickel	Silver	Clamp	Clamp
G4	082-312	Nickel	Silver	Clamp	Solder
G4	082-202	Nickel	Silver	Solder	Clamp
G4	082-202-RFX	Nickel	Gold	Clamp	Solder
G4	082-4426 (QPL)	Silver	Gold	Crimp	Crimp
G4	082-4352 (QPL)	Silver	Gold	Clamp	Solder
K	082-5993	Silver	Gold	Crimp	Crimp
L	082-5955-RFX	Nickel	Gold	Solder	Solder
L2	082-5956-RFX	Nickel	Gold	Solder	Solder
L3	082-6124	Nickel	Gold	Solder	Solder



### Angle Plugs

Cable		Plating		Termination	
Group	Part Number	Body	Contact	Body	Contact
C1	082-5374	Nickel	Gold	Crimp	Crimp
C1	082-4442 (QPL)	Silver	Gold	Crimp	Solder
G2	082-6157	Nickel	Gold	Crimp	Solder
G3	082-6048-1000	Silver	Gold	Crimp	Solder
G4	082-4440-1001	Nickel	Gold	Crimp	Crimp
G4	082-4440 (QPL)	Silver	Gold	Crimp	Crimp
G4	082-5988-1000	Silver	Gold	Crimp	Solder
K	082-5995	Silver	Gold	Crimp	Solder



## Cable Connectors (continued)

## Straight Jacks



Cable		Plating		Termination	
Group	Part Number	Body	Contact	Body	Contact
G4	082-63	Nickel	Silver	Clamp	Solder
G3	082-209-1006	Nickel	Silver	Clamp	Solder
C	082-5376-RFX	Nickel	Gold	Crimp	Crimp
E	082-6092-RFX	Nickel	Gold	Crimp	Crimp
G4	082-63-RFX	Nickel	Gold	Clamp	Solder
G2	082-6158	Nickel	Gold	Crimp	Crimp
C1	000-35025-RFX	Nickel	Gold	Clamp	Solder
E	000-36500-RFX	Nickel	Gold	Clamp	Solder
G4	082-4429-RFX	Nickel	Gold	Clamp	Solder

## Panel Jacks: 4-Hole Flange



Cable		Plating		Termination	
Group	Part Number	Body	Contact	Body	Contact
C1	082-5372	Nickel	Gold	Crimp	Crimp
G4	082-62	Nickel	Silver	Clamp	Solder
L	082-6099-RFX	Nickel	Gold	Solder	Crimp
L2	082-6098-RFX	Nickel	Gold	Solder	Crimp
L3	082-6163	Nickel	Gold	Solder	Solder

## Bulkhead Jacks

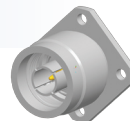


Cable		Plating		Termination	
Group	Part Number	Body	Contact	Body	Contact
B	082-5933	Nickel	Gold	Crimp	Solder
B	082-6096-RFX	Nickel	Gold	Solder	Solder
B	082-6093-RFX	Nickel	Gold	Crimp	Crimp
C	082-5378	Nickel	Gold	Crimp	Crimp
C	082-5378-RFX	Nickel	Gold	Crimp	Crimp
C1	082-5373	Nickel	Gold	Crimp	Crimp
G2	082-6151-RFX	Nickel	Gold	Crimp	Crimp
G3	082-6143-1000	Silver	Gold	Crimp	Crimp
G4	082-346-RFX	Nickel	Gold	Crimp	Crimp
K	082-5994	Silver	Gold	Crimp	Solder
L	082-6097-RFX	Nickel	Gold	Solder	Crimp
L3	082-6162	Nickel	Gold	Solder	Crimp

## Receptacles

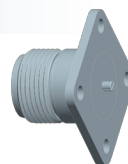
### Panel Plugs: 4-Hole Flange

Part Number	Plating		Terminal Type	Description
	Body	Contact		
000-49000-RFX	Nickel	Gold	Solder Cup	Front Mount Only
082-6100-RFX	Nickel	Gold	Slotted Post	Front Mount Only



### Panel Jacks: 4-Hole Flange

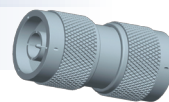
Part Number	Plating		Terminal Type	Description
	Body	Contact		
082-97	Nickel	Silver	Solder Cup	Front or Rear Mount
082-97-RFX	Nickel	Gold	Solder Cup	Front or Rear Mount
082-368 (QPL)	Silver	Gold	Solder Cup	Front or Rear Mount
082-6101-RFX	Nickel	Gold	Slotted Post	Slot Terminal



## Adapters

### Straight Plug-Plug

Part Number	Plating		Contact
	Body	Contact	
082-100	Nickel	Silver	Silver
082-100-RFX	Nickel	Nickel	Gold



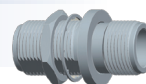
### Straight Jack-Jack

Part Number	Plating		Contact
	Body	Contact	
082-101	Nickel	Nickel	Silver
082-101-RFX	Nickel	Nickel	Gold



### Bulkhead Jack-Jack

Part Number	Plating		Contact
	Body	Contact	
082-66	Nickel	Nickel	Silver
082-66-RFX	Nickel	Nickel	Gold



### Angle Plug-Jack

Part Number	Plating		Contact
	Body	Contact	
082-213	Nickel	Nickel	Silver
082-64	Nickel	Nickel	Silver
082-64-RFX	Nickel	Nickel	Gold



### T-Adapters

Part Number	Plating		Adapter Ends
	Body	Contact	
082-102	Nickel	Silver	Jack-Plug-Jack
082-99	Nickel	Gold	Jack-Jack-Jack



<b>Cable Group</b>	<b>Cable Type</b>
A	RG-178, 196
B	RG-174, 188A, 316, Belden 7805
B1	RG-179, 187, Belden 9221
B2	RD-188/U, RD-316/U
B3	RD-179/U, AT&T 19224L2
C	RG-58, 58A, 58C, 141, 303, LMR195, Belden 7806A, 9907
C1	RG-55, 142, 223, 400
C2	LMR200, Belden 7807A
D	RG-58/U Plenum, Thinnet, RG-122/U, Belden 88240, 89907
E	RG-59, 62, 140, 210, Belden 8241, 8263, 8279, 9209
E1	RG-59/U 20 AWG center conductor, Belden 1426A, 1505A, 9100, 9278
E2	RD-59/U, Belden 8281, 9141, 9231
E3	RG-59/U Quad Shield, Belden 1152A
F	RG-59/U Plenum, Belden 1560A, 9259, 82259, 89259, 88241
F1	RG-59/U Plenum 20 AWG center conductor, Belden 82108
G1	RG-6, 143, 212
G2	8X, LMR240, Belden 7808A, 9258
G3	LMR400, Belden 7810A, 8214, 9913
G4	RG-8, 8A, 9, 87A, 213, 214, 225, 393
G5	RD-6/U
H	RG-11
H1	Belden 1694A, 9248
H2	Belden 1859A, 7731, 8213, 9292
H3	RG-54A/U
I	AT&T 734A, Belden 1505A
I2	AT&T 735A, Belden 735A1
J	Quad 59 headend cable
K	LMR600
K2	Belden 1695A
K3	RG-122, 180, 195, Belden 1855, 1865A, 8218
L	.141 semi-rigid, RG-402/U
L2	.085, .086, .087 semi-rigid, RG-405/U
L3	.250 semi-rigid
L4	.047 semi-rigid, Belden 1674
M	1/2 inch annular corrugated
M1	1 1/4 inch annular corrugated
M2	1 5/8 inch annular corrugated
M3	7/8 inch annular corrugated
N	1/4 Helical
N1	3/8 Helical
N2	1/2 Helical
N3	7/8 inch SFC
P1	.81 mm OD micro-cable
P2	1.13 mm OD micro-cable, TCB-068
P3	1.32 mm OD micro-cable
P4	1.37 mm OD micro-cable