

Description

Developed in the late 1940's, the BNC is a miniature version of the Type C. BNC stands for Bayonet Neill Concelman and is available in 50 Ohm and 75 Ohm impedance versions.

The BNC product line is a miniature quick connect / disconnect RF connector. It features two bayonet lugs on the female connector; mating is achieved with only a quarter turn of the coupling nut.

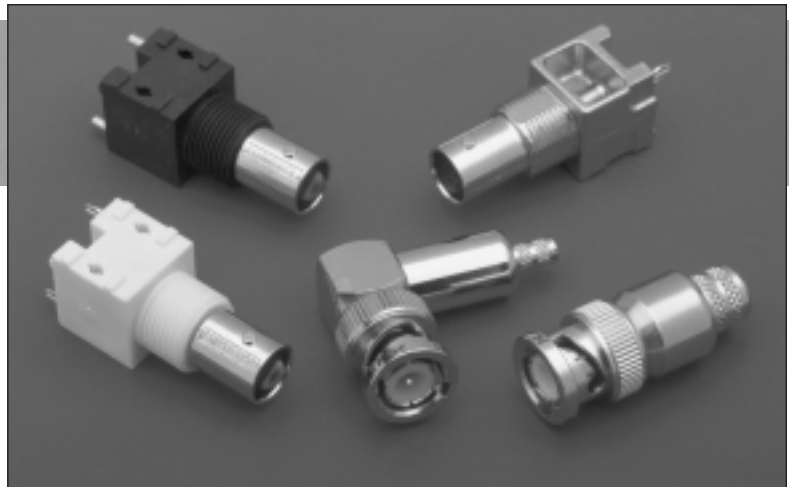
Primary Applications - Ideally suited for cable termination for miniature to subminiature coaxial cable (RG-58, 59, to RG-179, RG-316, etc.)

Features/Benefits

- Bayonet coupling mechanism provides quick mating and unmating.
- 50 and 75 ohm impedance designs allow customers to match impedance to system requirements.
- 50 and 75 ohm connectors are intermateable to ensure nondestructive mating.
- Three grades of connectors are available for military, industrial and commercial applications.

Applications

- Antennas
- Automotive (GPS)
- Base Stations
- Broadcast (75 ohm)
- Cable Assemblies
- Cable Modems
- Components
- Computers/LANs
- Instrumentation
- Network Analyzers
- Oscilloscopes
- Medical Equipment
- Mil-Aerospace
- Networks
- Radios
- Satcom
- Surge Protection
- Telecom



**50 ohm
BNC Cable Connectors**

| | |
|--------------------|---------|
| Specifications | 107 |
| Cable Plugs | 108-109 |
| Cable Jacks | 110 |
| Receptacles | 114-115 |
| PCB Receptacles | 116-118 |
| Adapters | 119-121 |
| Caps & Accessories | 122 |

75 ohm

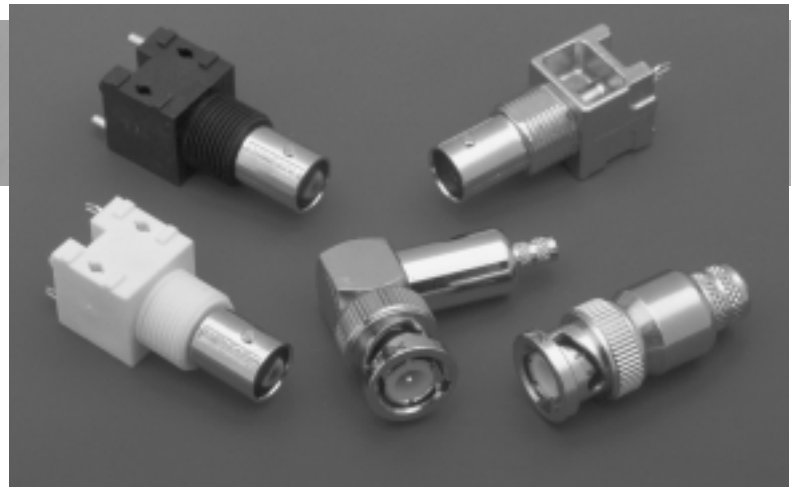
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| Specifications | 124 |
| High Performance Plugs | 125-126 |
| Jacks & Receptacles | 127 |
| PCB Receptacles | 128-132 |
| Adapters | 133-134 |

Description

Amphenol 50 ohm BNC connectors are miniature, lightweight units designed to operate up to 11 GHz and typically yield low reflection through 4 GHz. Designed to accommodate a large variety of RG and industry standard cables, BNC connectors are available in crimp-crimp, clamp-solder, SURETWIST®, and field serviceable termination styles. A full line of printed circuit board receptacles, bulkhead receptacles, resistor terminations, and other accessories complement the product offering.

Features/Benefits

Amphenol manufactures a full line of BNC connectors to meet all users' needs. Parts which are listed with the appropriate M39012 number in the catalog are **Military Grade** connectors produced in accordance with and actively qualified to the military specification MIL-C-39012. Connectors not listed with the M39012 number constitute the **Industrial Grade** product offering. These connectors provide comparable performance and generally feature nickel plated brass bodies, Teflon insulators, and either gold or silver plated center contacts. Amphenol's **Commercial Grade** connector offering carries the part number designation "RFX" for easy recognition. These low cost connectors typically utilize diecast and molded components. While



performance will not be equal to the Industrial or Military grade products, these connectors are ideal for use on a variety of commercial applications.

Amphenol's 50 ohm BNC connectors (where indicated) are recognized under the Component Program of Underwriter's Laboratories, Inc. They are ideal for use with medical equipment and test instrumentation where safety cannot be compromised.

Applications

- Computers/LANs
- Test and Measurement
- Medical Equipment
- Telecommunications
- Wireless/Networks

50 ohm

| | |
|-----------------------|---------|
| BNC 50 ohm Connectors | 106 |
| Plugs and Jacks | 108-113 |
| Adapters | 119 |
| PCB Connectors | 120-121 |

ELECTRICAL

| | |
|--------------------------------------|--|
| Impedance | 50 ohms nominal ■ |
| Frequency range | 0-4 GHz w/low reflection |
| Voltage rating | 500 volts peak |
| Dielectric withstanding voltage | 1,500 volts rms. |
| VSWR | M39012 straight connectors: 1.3 max. 0-4 GHz M39012 right angle: 1.35 max. 0-4 GHz |
| Other (MIL-C-39012 cable connectors) | Contact resistance: center contact 1.5 milliohm outer contact 0.2 milliohm Braid to body 0.1 milliohm RF leakage: - 55 dB minimum at 3 GHz Insertion loss: 0.2 dB maximum at 3 GHz Insulation resistance: 5000 megohms (min.) |

MECHANICAL

| | |
|------------------------------------|---|
| Mating | 2-stud bayonet coupling per M39012 |
| Cable affixment (braid or jacket) | All crimps: hex braid crimp. Clamps: screw-thread nut and braid clamp. |
| Cable affixment (center conductor) | Crimps: crimp or solder All others: solder only |
| Captivated contact | All crimps Others: where specified. |
| Cable retention | Crimps: 20-100 lbs. All others: 30-70 lbs. |

MATERIAL

| | |
|-------------------|---|
| Center contacts | Male: brass Female: Beryllium copper or phosphor bronze. Silver or gold plated |
| Other metal parts | Brass, Nickel finish except M39012 silver. |
| Insulators | TFE; copolymer of styrene, glass-TFE (hermetically sealed) |
| Clamp gaskets | Synthetic rubber, Silicone rubber |
| Crimp ferrule | Copper / Brass |

ENVIRONMENTAL

| | |
|---------------------|---|
| Temperature range | TFE insulators: - 65°C to + 165°C Copolymer of Styrene: - 55°C to + 85°C |
| Weatherproof | Clamps with clamp gaskets. Crimps with heat-shrink tubing. |
| Hermetic seals | Pass helium leak test of 2 X 10 ⁻⁸ cc/sec |
| Shock | MIL-Std. 202 method 202 |
| Vibration | MIL-Std. 202 method 204 (test cond. D) |
| Moisture resistance | MIL-Std. 202 method 106 |
| Corrosion | MIL-Std. 202 method 101 (test cond. B) |
| Temperature cycling | MIL-Std. 202 method 102 (test cond. D) |
| Altitude | MIL-Std. 202 method 105 (test cond. C) |

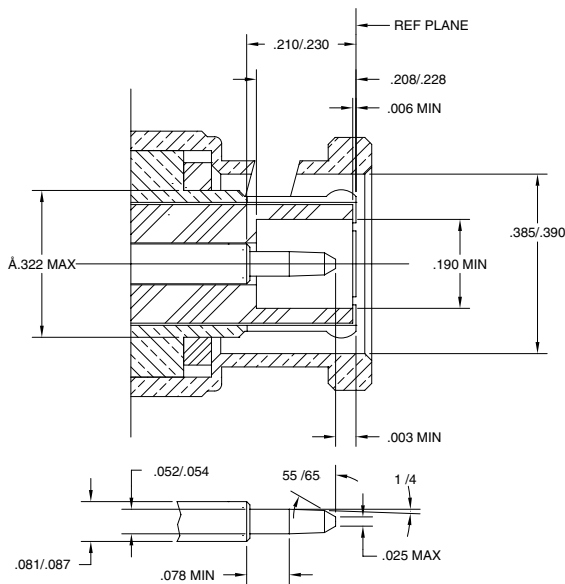
MILITARY SPECIFICATIONS

| | |
|-------------|------------------|
| MIL-C-39012 | Where applicable |
|-------------|------------------|

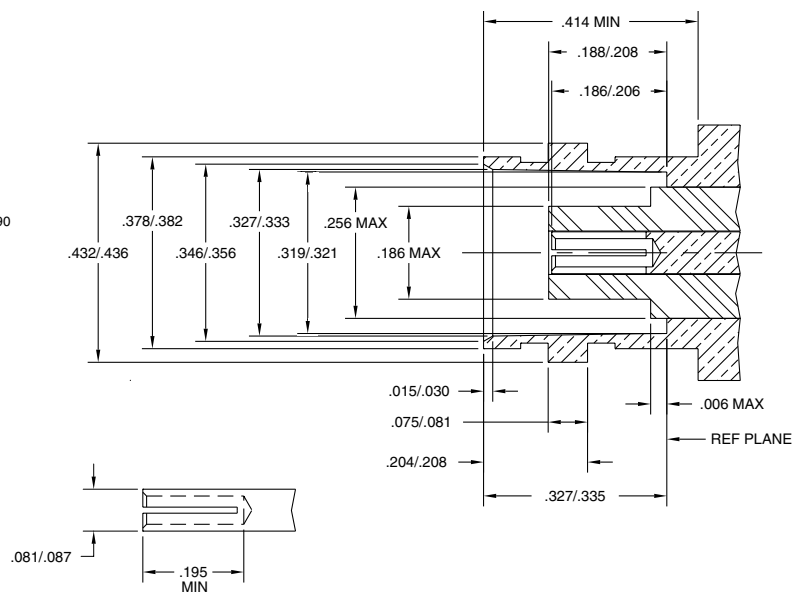
NOTE: These characteristics are typical and may not apply to all connectors.

■ Also see 75 ohm BNC connectors in the following section

PLUG

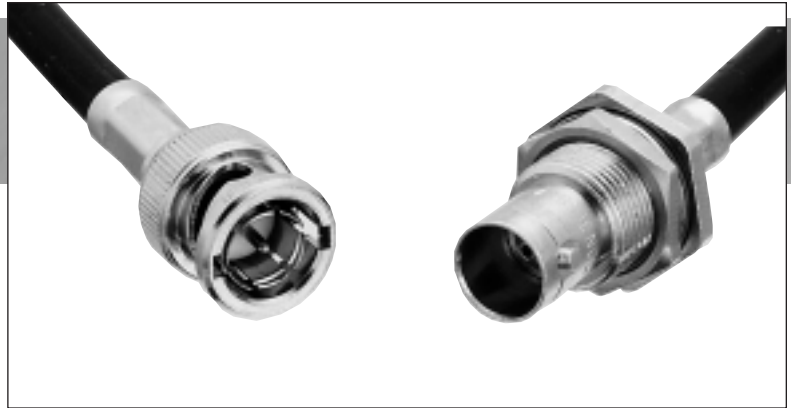


JACK



Description

To meet the need for higher performance, impedance matched cable interconnections, Amphenol offers a full line of 75 ohm BNC connectors. These connectors can be used in a variety of applications where true 75 ohm performance is needed to insure lower signal distortion.



Features/Benefits

Designed for the most popular 75 ohm cables used in broadcast and CATV applications as well as for plenum cables and others — these connectors feature crimp-crimp cable affixment for quick and reliable installation.

Two distinct types of 75Ω BNCs are available. Both types mate with each other and with 50Ω BNCs.

- Type 1 is designated 75Ω BNC-T1 and provides constant 75Ω performance with low VSWR DC to 4 GHz.
- Type 2 is designated 75Ω BNC-T2 and is usable with low reflection DC to 1 GHz. For applications above 1 GHz, Type 1 is recommended.

Applications

- Broadcast
- Satellite TV Earth Stations
- Telecommunications
- LAN
- Test and Measurement
- Security Transmission Systems
- Telecom
- Computer Networks
- HDTV

75 ohm

| | |
|---------------------|---------|
| 75 ohm Connectors | 123 |
| BNC Plugs and Jacks | 125-132 |
| Adapters | 133-134 |

BNC 75 ohm Specifications

ELECTRICAL

| | |
|---------------------------------|--|
| Impedance | 75 ohms nominal |
| Frequency range | 0-4 GHz |
| Voltage rating | 500 volts rms |
| Dielectric withstanding voltage | 1,500 volts rms. |
| Insulation resistance | 5,000 megohms min. |
| VSWR | Type 1: 1.5 + 0.1 f(GHz) DC to 4 GHz Type 2: 1.00 + 0.25 f(GHz) DC to 1 GHz |

* These characteristics are typical and may not apply to all connectors.

MATERIAL

| | |
|-------------------------------------|---|
| Body, coupling sleeve, male contact | Brass |
| Female contact | Beryllium copper or phosphor bronze |
| Crimp ferrule | Copper alloy |
| Plating | Contacts: gold Other metal parts: Nickel |

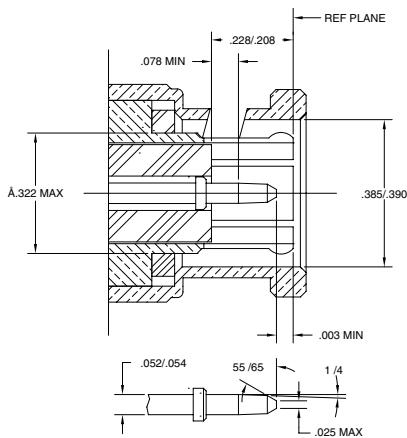
MECHANICAL

| | |
|-----------------|---------------------|
| Mating | 2-stud bayonet lock |
| Cable affixment | Crimp-Crimp |

ENVIRONMENTAL

| | |
|---------------------|---|
| Temperature range | TFE insulators: - 65°C to + 165°C Copolymer of Styrene: - 55°C to + 85°C |
| Weatherproof | Clamps with clamp gaskets. Crimps with heat-shrink tubing. |
| Hermetic seals | Pass helium leak test of 2 X 10 ⁻⁸ cc/sec |
| Shock | MIL-Std. 202 method 202 |
| Vibration | MIL-Std. 202 method 204 (test cond. D) |
| Moisture resistance | MIL-Std. 202 method 106 |
| Corrosion | MIL-Std. 202 method 101 (test cond. B) |
| Temperature cycling | MIL-Std. 202 method 102 (test cond. D) |
| Altitude | MIL-Std. 202 method 105 (test cond. C) |

PLUG



JACK

