

BNC

## coaxial connectors

## general information

## description

From the complete listing of BNC connectors in the following pages, the user should be able to find the precise connector for his needs. The Amphenol Series includes these six types:

**Regular.** Non-constant impedance, unimproved connectors that can be used successfully at lower frequencies where impedance-match is not critical. The clamping mechanism utilizes a thread nut, flat compression gasket (usually) and a tapered braid clamp.

**Improved.** Constant 50 ohm impedance connectors which provide excellent performance through X-Band frequencies. Connectors are also mechanically sturdier than unimproved types. The Improved clamping mechanism utilizes a threaded nut, flat washer, "V" groove gasket and peaked braid clamping, providing a superior metal-to-metal clamp.

**Improved with Captivated Contacts.** This connector design represents an original Amphenol solution (U. S. Patent 2,870,420) to the problems of rapid environmental changes and imposed mechanical strains which can cause cable dielectrics to recede and often cause actual disconnect. Captivated contacts are mechanically retained in a fixed position within the connector, maintaining circuit continuity even under severe conditions. These connectors are electrically similar to Improved BNCs and feature the same superior cable clamping mechanism. An accessory adapter kit is available to adapt these connectors for use with Amphenol copper jacketed (CUJAK 421-668) cable.

**Three Crimped Constructions.** Crimped connectors, designed to give maximum operating performance at lowest possible installed cost, are recommended by Amphenol for high-volume production assemblies. They combine excellent electrical characteristics with the ultimate in cable assembly simplicity. Using standard crimping tools, these units assemble in a fraction of the time normally required for standard braid-clamp-type connectors by eliminating critical assembly and soldering operations and reducing the parts to handle from six and sometimes seven to three. Center contacts are captivated or semi-captivated as indicated below to prevent circuit discontinuity under unusual environmental or mechanical stress.

**Original Amphenol Crimp:** These connectors have gold-plated captivated contacts with shoulder. Each assembly includes a silicone rubber boot and is classed as weatherproof. The rugged mechanical construction of these connectors make them an excellent choice for applications requiring a high degree of vibration.

**Quick-Crimp:** These connectors have gold-plated semi-captivated contacts and are classed as weatherproof. Optional heat shrink tubing is recommended in applications requiring severe environmental conditions.

**MIL-Crimp:** Recommended by Amphenol as the optimum BNC connector, MIL-Crimps meet the requirements of the new MIL-C-23329A (Amended). MIL-C-23329A is the first Military specification covering RF coaxial connectors to (1) include specific electrical performance requirements and test procedures and (2) cover the mechanical crimp concept of cable attachment. Previously exception had to be taken each time crimped coaxial connectors were used on Military programs even though they were far superior electrically and less costly to install than their complicated UG counterparts.

Amphenol MIL-Crimps have completely captivated gold-plated contacts. Except for some dimensional differences they are very similar in appearance to Quick-Crimps, and are weatherproof. Optional heat-shrink tubing is recommended in applications requiring severe environmental conditions.

Amphenol Series BNC connectors meet applicable sections of MIL-C-3608 and MIL-C-23329A.

## characteristics

## electrical

impedance	unimproved: non-constant all others: 50 ohm
frequency range	0-10 Gc
voltage	500 volts peak
high potential	1,500 volts rms, 60 cycles, 1 minute

## environmental

thermal limits	Teflon insulators: -67°F to 390°F Rexolite insulators: -67°F to 185°F
weatherproof	Standards: with clamp gaskets Orig.-Crimps: with boots MIL- & Quick-Crimps: are weatherproof
hermetic seals	pass helium leak test of $2 \times 10^{-8}$ cc/sec.

## mechanical

mating	2-stud bayonet lock
cable affixment	Standards: screw-thread nut and braid clamp All Crimps: hex braid crimp

## material

contacts	male: brass female: beryllium copper or phosphor bronze
other metal parts	brass
plating	.0002" silver min .0002" gold-over-copper
insulators	Teflon; Rexolite; glass-Teflon (hermetically sealed)
clamp gaskets	synthetic rubber; silicone rubber
boots	Orig.-Crimps: silicone rubber
heat-shrink tubing	MIL- & Quick-Crimps: Thermofit plastic