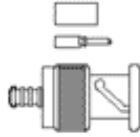


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product details

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Please note: Images are for reference only

Amphenol Part Number:	031-4427
Product Series:	BNC / RP-BNC
Product Type:	Connectors » Cable
Application:	Crimp
Body Plating:	Silver
Body Termination:	Crimp
Cable Group:	C1
Cable Type:	RG-142 , RG-400
Connector Body Style:	Straight
Contact Plating:	Gold
Contact Termination:	Crimp
Gender:	Plug
Grade:	Industrial
Impedance:	50 Ohm
RoHS Compliant:	Yes

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.

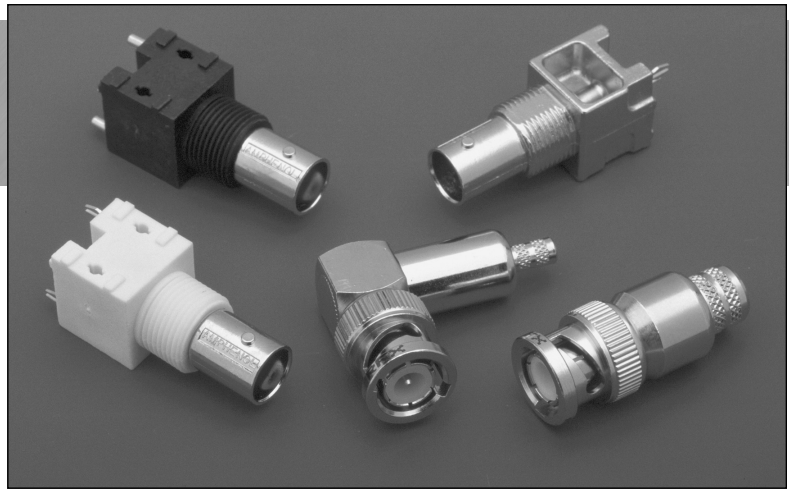
Primary Applications - Ideally suited for cable termination for miniature to subminiature coaxial cable (RG-58, 59, to RG-179, RG-316, etc.)

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
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75 ohm

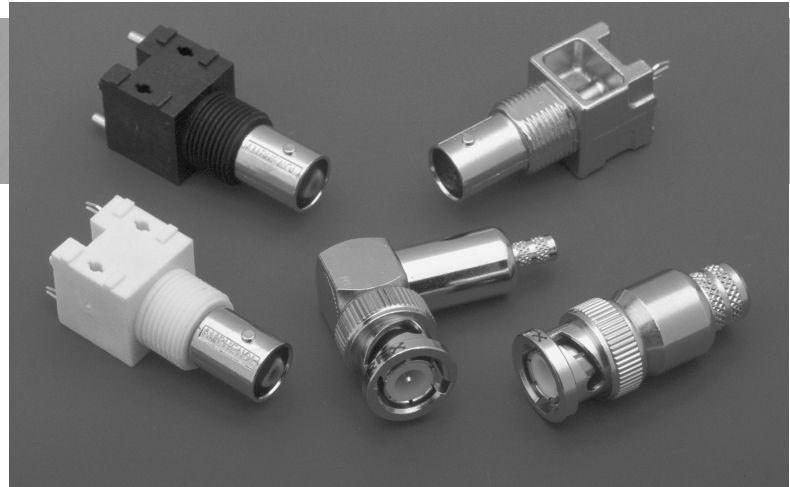
Specifications	124
High Performance Plugs	125-126
Jacks & Receptacles	127
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Description

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)

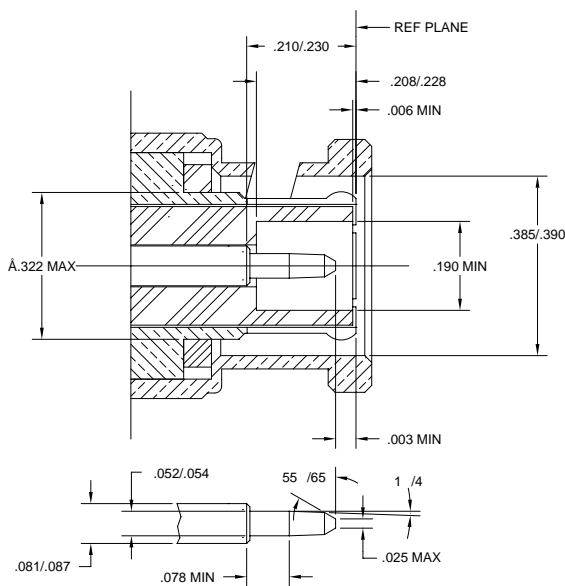
MILITARY SPECIFICATIONS

MIL-C-39012	Where applicable
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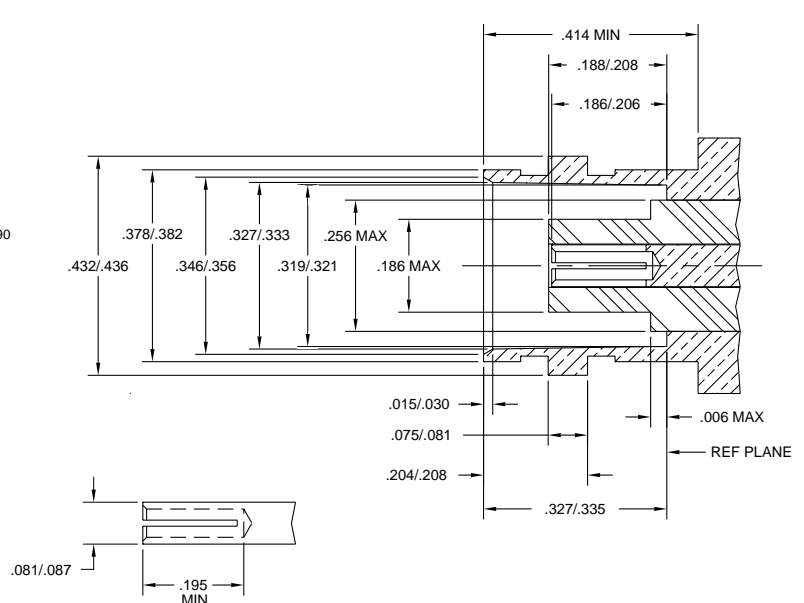
NOTE: These characteristics are typical and may not apply to all connectors.

■ Also see 75 ohm BNC connectors in the following section

PLUG



JACK



BNC 50 ohm 3-Piece Cable Crimp Plugs

Fig. 1

BNC 3-Piece Crimp Plugs

36650-1003	68175-5RFX	31-320-1006	31-326	31-5557-RFX†
36650-3RFX	31-242	31-320-RFX	31-326-RFX	31-5558-RFX
36875	31-242-RFX	31-321	31-4320	31-5560-RFX†
68175-1003	31-315	31-321-1000	31-4321	31-5559-RFX
68175-1005	31-315-1005	31-321-RFX	31-4411	31-5559-1RFX
68175-1011	31-315-RFX	31-321-10RFX	31-4427	31-5556-1RFX
68175-11RFX	31-320	31-325	31-5556-RFX†	

Fig. 2

BNC Crimp Plugs

31-351
31-359
31-371

BNC 3-PIECE CRIMP CABLE PLUGS

Cable RG-/U	Cable Attachment		Dimensions, inches (millimeters)			Notes			Military Number	Amphenol Number	Fig.
	Outer	Inner	a ■	b	c •	CAI	Plt.	Ins.			
6 TYPE (.314 OD)	Crimp	Crimp	1.17(29.7)	.571(14.5)	.314(8.0)	C26	P7	D23	—	31-5558-RFX	1
55, 142, 223, 400	Crimp	Crimp	1.27(32.1)	.563(14.3)	.220(5.59)	C26	P15	D1	—	36875*	1
	Crimp	Crimp	1.20(30.5)	.563(14.3)	.220(5.59)	C26	P15	D1	M23329/3-02,3-04	31-326*	1
	Crimp	Crimp	1.11(28.2)	.563(14.3)	.220(5.59)	C26	P7	D26	—	31-326-RFX	1
	Crimp	Press Fit	1.31(33.3)	.571(14.5)	.212(5.4)	C7R	P7	D23	—	31-5557-RFX†	1
58, 141	Crimp	Crimp	1.11(28.2)	.563(14.3)	.206(5.2)	C26	P15	D1	M23329/3-01,3-03	31-5800	☆
	Crimp	Crimp	1.17(29.8)	.571(14.5)	.210(5.3)	C26	P7	D26	—	31-320-RFX	1
	Crimp	Solder	1.47(37.3)	.562(14.3)	.206(5.2)	C26b	P15	D1	—	31-351*	2
	Crimp	Crimp	1.09(27.8)	.563(14.3)	.206(5.23)	C26	P33	D1	M39012/16-0013	31-4320*	1
	Crimp	Crimp	1.28(32.6)	.571(14.5)	.181(4.6)	C26	P7	D26	—	36650-3RFX	1
59 (20 AWG Ctr. Contact)	Crimp	Press Fit	1.31(33.3)	.571(14.5)	.260(6.6)	C7R	P7	D23	—	31-5556-RFX†	1
59, 62, 140, 210, 302	Crimp	Crimp	1.11(28.2)	.563(14.3)	.260(6.6)	C26	P15	D26	—	31-5900	☆
	Crimp	Crimp	1.12(28.5)	.562(14.3)	.261(6.6)	C26	P15	D1	M23329/3-05	31-321*	1
	Crimp	Crimp	1.17(29.8)	.571(14.5)	.260(6.6)	C26	P7	D26	—	31-321-RFX	1
59	Crimp	Solder	1.47(37.3)	.563(14.3)	.261(6.6)	C26b	P15	D1	—	31-359*	2
	Crimp	Crimp	1.12(28.5)	.562(14.3)	.261(6.6)	C26	P33	D1	M39012/16-0015	31-4321	1
	Crimp	Crimp	1.11(28.2)	.562(14.3)	.261(6.6)	C26	P15	D1	—	68175-1005	1
142, 400 Plenum 59, 62	Crimp	Crimp	1.17(29.8)	.571(14.5)	.260(6.6)	C26	P7	D26	—	68175-5RFX	1
	Crimp	Crimp	1.11(28.2)	.563(14.3)	.220(5.6)	C26	P33	D1	M39012/16-0503	31-4427*	1
	Crimp	Crimp	1.28(32.6)	.571(14.5)	.212(5.4)	C26	P7	D26	—	68175-11RFX	1
174, 179, 187, 188, 316	Crimp	Press Fit	1.31(33.3)	.571(14.5)	.212(5.4)	C7R	P7	D23	—	31-5560-RFX†	1
	Crimp	Solder	1.34(34.1)	.563(14.3)	.128(3.25)	C26b	P15	D9	—	31-371*	2
	Crimp	Crimp	1.19(30.2)	.562(14.3)	.125(3.2)	C26	P15	D1	—	31-315	☆
174, 188, 316	Crimp	Crimp	1.19(30.2)	.571(14.5)	.106(2.7)	C26	P7	D23	—	31-315-RFX	1
	Crimp	Crimp	1.19(30.2)	.562(14.3)	.117(3.0)	C26	P15	D1	—	31-242*	1
179, 187	Crimp	Crimp	1.19(30.2)	.571(14.5)	.106(2.7)	C26	P7	D23	—	31-242-RFX	1
	Crimp	Crimp	1.11(28.2)	.562(14.3)	.135(3.4)	C26	P16	D1	—	31-315-1005	1
Dbl. Br. RG-316	Crimp	Crimp	1.11(28.2)	.562(14.3)	.135(3.4)	C26	P16	D1	—	31-315-1005	1
Belden 8213	Crimp	Crimp	1.59(40.5)	.562(14.3)	.418(10.6)	C26	P17	D1	—	31-4411	1
Belden 8218	Crimp	Crimp	1.11(28.2)	.562(14.3)	.175(4.4)	C26	P15	D1	—	31-325*	1
Belden 8281, 88281	Crimp	Crimp	1.21(30.7)	.562(14.3)	.342(8.7)	C26	P15	D1	—	31-321-1000*	1
	Crimp	Crimp	1.17(29.8)	.571(14.5)	.334(8.5)	C26	P7	D26	—	31-321-10RFX	1
Belden 9259	Crimp	Crimp	1.11(28.2)	.562(14.3)	.261(6.6)	C26	P15	D1	—	68175-1003	1
Belden 9907, 89907	Crimp	Crimp	1.11(28.2)	.562(14.3)	.196(5.0)	C26	P15	D1	—	31-320-1006	1
Belden 1560A, 82259, 89259, Plenum 59, 62	Crimp	Crimp	1.11(28.2)	.563(14.3)	.220(5.6)	C26	P15	D1	—	68175-1011	1
Belden 82907, 88240, 89907, Plenum 58	Crimp	Crimp	1.11(28.2)	.563(14.3)	.175(4.4)	C26	P15	D1	—	36650-1003	1
Plenum 58	Crimp	Press Fit	1.28(32.6)	.571(14.5)	.181(4.6)	C26	P7	D26	—	36650-3RFX	1
Plenum 58	Crimp	Press Fit	1.03(25.0)	.563(14.3)	.213(4.6)	C26	P7	D28	—	31-5559-1RFX	1
Plenum 58	Crimp	Press Fit	1.03(25.0)	.563(14.3)	.26(4.6)	C7R	P7	D23	—	31-5556-1RFX	1

* recognized under the component program of U.L., Inc. • accommodates cable diameter ☆ see Fig. 1 and table on page 109. ▲ distributor stocked
■ includes outer ferrule † features preinstalled center contact