

# BNC Series

## Description

BNC connectors are miniature units, light in weight and feature a quick disconnect bayonet lock coupling mechanism. One of the most widely used connector interfaces in the industry today, BNC connectors are available in a number of termination styles and accommodate a variety of popular coaxial cables.

## Applications

- Computers/LANs
- Instrumentation
- Test and Measurement
- Medical Equipment
- Broadcast (75 Ω)

## Features

- BNC connectors with a 50 ohm nominal impedance are designed for use in telecommunication, data communication and test and instrumentation equipment. BNC connectors with a 75 ohm nominal impedance are designed for broadcast, video and other applications which require impedance matched performance. Both 50 ohm and 75 ohm BNC connectors are intermateable.
- Interface according to IEC 169-8, MIL-C-39012 BNC, MIL-STD-348A, CECC 22120

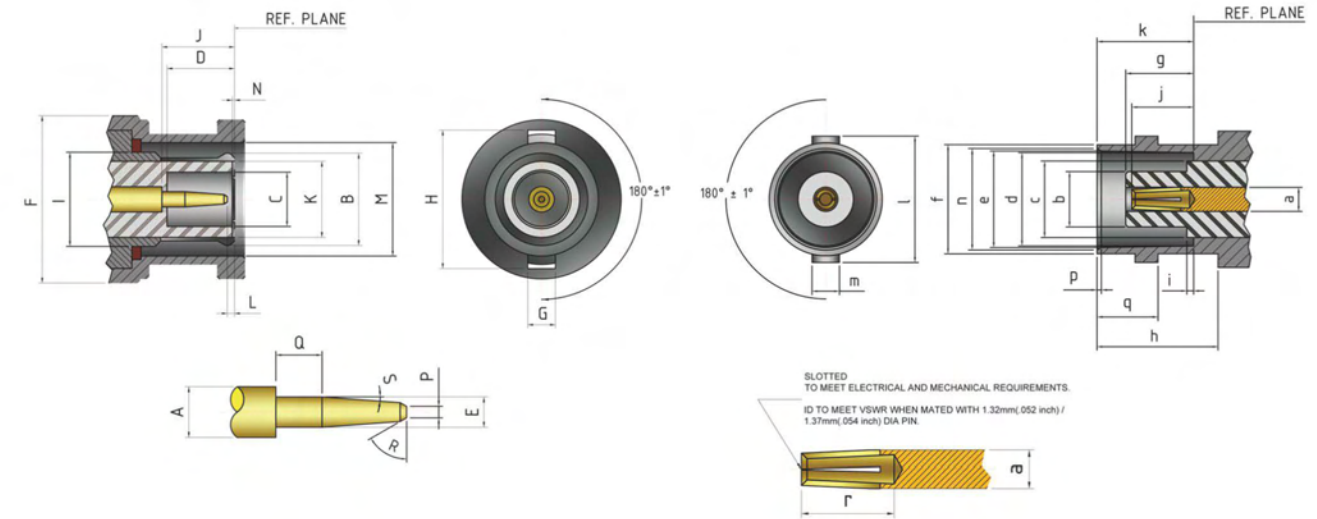


## Specification

### BNC 50 ohm 0-4 GHz

BNC coaxial connectors are one of the world's most popular RF connectors. They are miniature, light-weight and can operate satisfactorily up to 4 GHz. The BNC is typically used in applications from DC to 4 GHz and yield low reflection in this frequency range. Cable terminations are available in crimp, clamp, solder and jacket quick twist configurations. The two-stud bayonet lock coupling provides ease of connecting and disconnecting and is ideally suited for applications such as test equipment where this feature is notably significant. BNC connectors are most prevalent in computer networks, audio, data processing and telecommunications equipment because of their size and relatively low installed cost.

## Interface Mating Dimensions

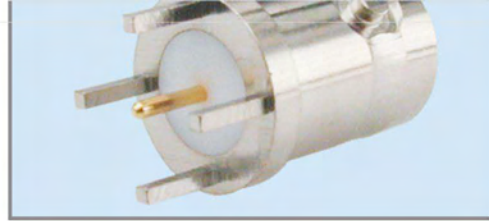


### PLUG

| Letter | Milimeters (inches)       |             |
|--------|---------------------------|-------------|
|        | Minimum                   | Maximum     |
| A      | 2.06(.081)                | 2.21(.087)  |
| B      | Flared to meet Gauge test |             |
| C      | 4.83(.190)                | —           |
| D      | 5.28(.208)                | 5.79(.227)  |
| E      | 1.32(.052)                | 1.37(.053)  |
| F      | —                         | 15.06(.592) |
| G      | 2.31(.091)                | 2.46(.097)  |
| H      | 11.76(.463)               | 12.01(.473) |
| I      | —                         | 8.18(.322)  |
| J      | 5.33(.210)                | 5.84(.230)  |
| K      | 7.00 nom                  |             |
| L      | 0.08(.003)                | —           |
| M      | 9.78(.385)                | 9.91(.390)  |
| N      | 0.15(.006)                | —           |
| P      | —                         | 0.64(.025)  |
| Q      | 1.98(.078)                | —           |
| R      | 55°                       | 66°         |
| S      | 1°                        | 4°          |

### JACK

| Letter | Milimeters (inches) |             |
|--------|---------------------|-------------|
|        | Minimum             | Maximum     |
| a      | 2.06(.081)          | 2.21(.087)  |
| b      | —                   | 4.72(.186)  |
| c      | —                   | 6.50(.256)  |
| d      | 8.10(.319)          | 8.15(.321)  |
| e      | 8.31(.327)          | 8.46(.333)  |
| f      | 9.60(.378)          | 9.70(.382)  |
| g      | 4.78(.188)          | 5.28(.208)  |
| h      | 10.52(.414)         | —           |
| i      | —                   | 0.15(.006)  |
| j      | 4.72(.186)          | 5.23(.206)  |
| k      | 8.31(.327)          | 8.51(.335)  |
| l      | 10.97(.432)         | 11.07(.436) |
| m      | 1.91(.075)          | 2.06(.081)  |
| n      | 8.79(.346)          | 9.04(.356)  |
| p      | 0.76(.015)          | 0.38(.030)  |
| q      | 5.18(.204)          | 5.28(.208)  |



### Electrical

|                                 |  |
|---------------------------------|--|
| Impedance                       | 50Ω / 75Ω  |
| Frequency Range                 | 0 to 4 GHz / 0 to 1 GHz                                      |
| VSWR                            | ≤ 1.3 (straight connector)<br>≤ 1.35 (right angle connector) |
| RF Leakage                      | ≥ 55 dB  |
| Dielectric Withstanding Voltage | 1500 V rms   |
| Voltage Rating                  | ≥ 500 V rms (depending on cable)                             |
| Center Contact Resistance       | ≤ 1.5 mΩ   |
| Outer Contact Resistance        | ≤ 1 mΩ   |
| Insulation Resistance           | ≥ 5 GΩ   |

### Mechanical

|                              |  |
|------------------------------|--|
| Mating                       | Bayonet Coupling   |
| Connector Durability         | ≥ 500 Cycles (for beryllium copper female contact only)                  |
| Recommended Mating Torque    | 0.6 lbs ~ 2.5 lbs  |
| Coupling Nut Retention Force | ≥ 101.2 lbs  |
| Cable Retention Force        | ≥ 12.1 lbs (for RG316)<br>≥ 28.7 lbs (for RG58)<br>≥ 38.3 lbs (for RG59) |

### Environmental

|                        |                                  |
|------------------------|----------------------------------|
| Temperature Range      | -65° C to 165° C                 |
| Corrosion (Salt Spray) | MIL-STD-202, Method 101, Cond. B |
| Vibration              | MIL-STD-202, Method 204, Cond. B |
| Thermal Shock          | MIL-STD-202, Method 107, Cond. B |
| Mechanical Shock       | MIL-STD-202, Method 213, Cond. G |

### Material

| Parts Name     | Material  | Plating        |
|----------------|---|----------------|
| Body           | Brass   | Gold or Nickel |
| Center Contact | Male: Brass<br>Female: Brass,<br>Phosphor Bronze or<br>Beryllium Copper | Gold or Nickel |
| Insulator      | PTFE or Delrin  | None           |
| Gasket         | Silicone Rubber, Rubber   | None           |
| Crimp Ferrule  | Annealed Copper   | Same as Body   |

Note: Other Material/Finish is Available on Request.

## Crimp Termination for Flexible Cable

### BNC Straight Crimp Plug

|  |                            |   |
|--|----------------------------|---|
|  | Hand Tool                  | See Appendix B  |
|  | Cable                      | RG6/G, 8/U, 8/X, 58/U,<br>59/U, 174/U, 179/U,<br>316/U, 213/U |
|  | Cable Assembly Instruction | See Appendix A<br>Code E                                      |

### BNC Quick Straight Crimp Plug

|  |                            |                          |
|--|----------------------------|--------------------------|
|  | Hand Tool                  | See Appendix B           |
|  | Cable                      | RG6/U, 58/U, 59/U        |
|  | Cable Assembly Instruction | See Appendix A<br>Code A |

### BNC Quick Straight Crimp Jack

|  |                            |                          |
|--|----------------------------|--------------------------|
|  | Hand Tool                  | See Appendix B           |
|  | Cable                      | RG59, 62; URM70, 90      |
|  | Cable Assembly Instruction | See Appendix A<br>Code A |

### BNC R/A Crimp Plug

|  |                            |  |
|--|----------------------------|--|
|  | Hand Tool                  | See Appendix B                                 |
|  | Cable                      | RG6/U, 8/X, 58/U, 59/U,<br>174/U, 179/U, 316/U |
|  | Cable Assembly Instruction | See Appendix A<br>Code H                       |

### BNC Straight Crimp Plug

|  |                            |                          |
|--|----------------------------|--------------------------|
|  | Hand Tool                  | See Appendix B           |
|  | Cable                      | RG59, 62; URM70, 90      |
|  | Cable Assembly Instruction | See Appendix A<br>Code B |



### BNC Straight Crimp Plug

|  |  |                            |                              |
|--|--|----------------------------|------------------------------|
|  |  | Hand Tool                  | See Appendix B               |
|  |  | Cable                      | RG174/U, 178/U, 179/U, 316/U |
|  |  | Cable Assembly Instruction | See Appendix A Code B        |

### BNC Bulkhead Crimp Jack

|  |  |                            |   |
|--|--|----------------------------|---|
|  |  | Hand Tool                  | See Appendix B                                |
|  |  | Cable                      | RG174/U, 188/U, 316/U, B7805A; URM95; LMR100A |
|  |  | Cable Assembly Instruction | See Appendix A Code E                         |

### BNC Bulkhead Crimp Jack

|  |  |                            |   |
|--|--|----------------------------|---|
|  |  | Hand Tool                  | See Appendix B                              |
|  |  | Cable                      | RG6/U, 8/X, 58/U, 59/U, 174/U, 179/U, 316/U |
|  |  | Cable Assembly Instruction | See Appendix A Code E                       |

### Clamp Termination for Flexible Cable

#### BNC Straight Clamp Plug

|  |  |                            |                       |
|--|--|----------------------------|-----------------------|
|  |  | Hand Tool                  | Nil                   |
|  |  | Cable                      | RG6/U, 58/U, 59/U     |
|  |  | Cable Assembly Instruction | See Appendix A Code L |

### Crimp Termination for Flexible Cable

#### BNC Crimp Jack, Panel Type

|  |  |                            |                       |
|--|--|----------------------------|-----------------------|
|  |  | Hand Tool                  | See Appendix B        |
|  |  | Cable                      | RG58/U, 174/U, 316/U  |
|  |  | Cable Assembly Instruction | See Appendix A Code E |

#### BNC Straight Clamp Plug, Lock Type

|  |  |                            |                       |
|--|--|----------------------------|-----------------------|
|  |  | Hand Tool                  | Nil                   |
|  |  | Cable                      | RG6/U                 |
|  |  | Cable Assembly Instruction | See Appendix A Code K |

### BNC Straight Crimp Jack

|  |  |                            |   |
|--|--|----------------------------|---|
|  |  | Hand Tool                  | See Appendix B                              |
|  |  | Cable                      | RG6/U, 8/X, 58/U, 59/U, 174/U, 179/U, 316/U |
|  |  | Cable Assembly Instruction | See Appendix A Code E                       |

### Twist-on Termination for Flexible Cable

#### BNC Twist-on Plug

|  |  |                            |                       |
|--|--|----------------------------|-----------------------|
|  |  | Hand Tool                  | Nil                   |
|  |  | Cable                      | Nil                   |
|  |  | Cable Assembly Instruction | See Appendix A Code O |

### BNC Bulkhead Crimp Jack

|  |  |                            |                           |
|--|--|----------------------------|---------------------------|
|  |  | Hand Tool                  | See Appendix B            |
|  |  | Cable                      | RG8/X, 58/U, 174/U, 316/U |
|  |  | Cable Assembly Instruction | See Appendix A Code E     |

### Printed Circuit Board, Straight or R/A Terminal

#### BNC Jack, PCB Type

|  |  |            |                           |
|--|--|------------|---------------------------|
|  |  | Hand Tool  | Nil                       |
|  |  | Cable      | Nil                       |
|  |  | PCB Layout | Refer to S-CONN's Drawing |