

Coaxial Cable Termination

RF one-step BNC/TNC connectors



Applications

RF one-step BNC/TNC connectors are single-piece assemblies for terminating the center conductor and the braid of a broad range of coaxial cables.

The connectors are fully intermateable with MIL-C-39012 connectors and are available in 50-ohm and 75-ohm versions.

Features and benefits

- Easy, quick installation.
- Outstanding cable-retention force.
- Solder-solder connection type (center conductor and braid).
- One-step termination for easy, quick installation and lower installed cost.
- Exceptional cable retention force to withstand high vibration and frequent mates and demates.
- Fully soldered center conductor and braid.
- Excellent built-in strain relief against vibration and excessive handling.
- Long-term reliability.
- Controlled soldering termination.
- Use with standard RG/U cables and Raychem Cheminax cables.
- Three product sizes to accommodate a wide range of cables.
- Meets performance requirements of MIL-C-39012 up to 2.8 GHz.

Available in:

Americas

Europe

Asia Pacific

Specifications

Raychem
RB-115

Installation

For proper installation of these devices, the correct heating tool and reflector attachment must be used.

Any one of the following Raychem heating tools is recommended:

- Steinel Model HL1802E
- CV-1981

Refer to Raychem installation procedure RPIP 683-00 for detailed instructions.

Fax-on-demand

US only (800) 260-9099

Outside US (650) 257-2301

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Product options and part numbering system (mm/in)

Connector style		Dash No. Style		Connector type	
RXX	XX	X	XX	TNC	BNC
	-00	Straight plug		24.5 max. (.965)	24.5 max. (.965)
	-01	Right angle plug		33.5 max. (1.32) 28 (1.09)	31.5 max. (1.23) 28 (1.09)
	-02	Straight bulkhead jack		25.4 max. (1.0)	25.4 max. (1.0)
	-03	Straight jack		25.4 max. (1.0)	25.4 max. (1.0)
	-04	Straight panel jack		25.4 max. (1.0)	25.4 max. (1.0)
				4 x M2.5 x 0.45	4 x M2.5 x 0.45

Male

Female

Connector size
 L = Large
 M = Medium
 S = Small

50 = 50 ohms
 75 = 75 ohms

D = Nickel-plated brass body, gold-plated brass pin

B = BNC
 T = TNC

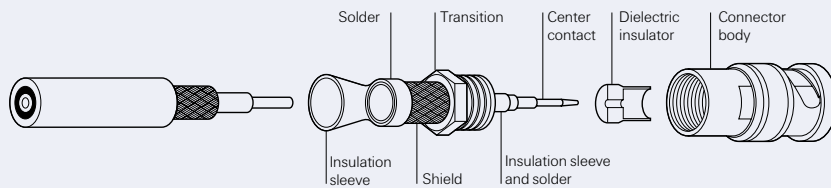
Example: RBD-50L-00 is a BNC connector, 50 ohms, large size, with straight plug body.

Users should independently evaluate the suitability of the product for their application. Before ordering check with factory for most current data.

Coaxial Cable Termination

RF one-step BNC/TNC connectors (cont'd.)

Product characteristics



Material

Center contact	Gold-plated beryllium copper (female) Gold-plated brass (male)
Dielectric insulator	PTFE
Transition	Silver-plated brass
Connector body	Nickel-plated brass
Solder and flux	Sn63Pb37, RMA flux
Braided shield	Tin-plated copper wire per ASTM B3
Insulation sleeve	Radiation-crosslinked, heat-shrinkable polyvinylidene fluoride, transparent blue
Strain relief/sealing sleeve	Radiation-crosslinked, heat-shrinkable modified polyolefin with adhesive, black

Typical performance

Dielectric withstand voltage	1500 V
Insulation resistance	5000 megohms
Temperature rating	-55C to 150C
Contact resistance-straight	Inner = 1.5 milliohms, outer = 1.0 milliohm
Contact resistance-right angle	Inner = 2.5 milliohms, outer = 1.5 milliohms
Cable retention force	295N (66 lb) to 822N (196 lb)
Voltage rating	500 V RMS
Connector durability	500 mating cycles minimum

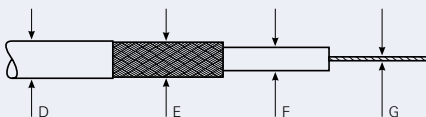
Electrical performance

Nominal impedance	50 and 75 ohms
Frequency range	Up to 2.8 GHz

Part selection process

1. From Product Options and Dimensions on page 8-61, select the connector style you need (BNC or TNC, plug or jack, male or female contacts).
2. From the tables that follow, find the appropriate table for the connector style you selected.
3. From the appropriate table, select the connector part number based on the RG cable type or Raychem cable part number.
For cable types not shown use the cable dimensions.

Note: The cable dimensions in each table are keyed to the diagram below.



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Cable type		Cable dimensions in millimeters (inches)						Part Number
Impedance (ohms)	RG cables	Raychem cables	D (min.-max.)	E (min.-max.)	F (max.)	G (max.)		
BNC straight plugs, male contacts								
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-50-S-00	
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RBD-50-M-00	
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-50-L-00	
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	5.0-9.3 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-75-S-00	
75		7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.126)	1.25 (.050)	RBD-75-M-00	
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-75-L-00	
BNC right-angle plugs, male contacts								
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-50-S-01	
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RBD-50-M-01	
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-50-L-01	
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-75-S-01	
75		524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RBD-75-M-01	
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-75-L-01	

Users should independently evaluate the suitability of the product for their application.
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8-63 Electrical Interconnect Products

Coaxial Cable Termination

RF one-step BNC/TNC connectors (cont'd.)

Part number selection - BNC coaxial connectors

Cable type			Cable dimensions in millimeters (inches)				Part Number
Impedance (ohms)	RG cables	Raychem cables	D (min.-max.)	E (min.-max.)	F (max.)	G (max.)	
BNC straight bulkhead jacks, female contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-50-S-02
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RBD-50-M-02
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-50-L-02
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-75-S-02
75		75 7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RBD-75-M-02
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-75-L-02
BNC straight jacks, female contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-50-S-03
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RBD-50-M-03
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-50-L-03
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-75-S-03
75		75 7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RBD-75-M-03
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-75-L-03

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Cable type		Cable dimensions in millimeters (inches)				Part Number	
Impedance (ohms)	RG cables	Raychem cables	D (min.-max.)	E (min.-max.)	F (max.)		G (max.)
BNC straight panel jacks, female contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-50-S-04
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RBD-50-M-04
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-50-L-04
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RBD-75-S-04
75		7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RBD-75-M-04
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RBD-75-L-04

Part number selection - TNC coaxial connectors

Cable type		Cable dimensions in millimeters (inches)				Part Number	
Impedance (ohms)	RG cables	Raychem cables	D (min.-max.)	E (min.-max.)	F (max.)		G (max.)
TNC straight plugs, male contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-50-S-00
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RTD-50-M-00
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-50-L-00
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-75-S-00
75		7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RTD-75-M-00
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-75-L-00

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8-65 Electrical Interconnect Products

Coaxial Cable Termination

RF one-step BNC/TNC connectors (cont'd.)

Part number selection - TNC coaxial connectors (continued)

Cable type			Cable dimensions in millimeters (inches)				Part Number
Impedance (ohms)	RG cables	Raychem cables	D (min.-max.)	E (min.-max.)	F (max.)	G (max.)	
TNC right-angle plugs, male contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-50-S-01
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RTD-50-M-01
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-50-L-01
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-75-S-01
75		7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RTD-75-M-01
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-75-L-01
TNC straight bulkhead jacks, female contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-50-S-02
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RTD-50-M-02
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-50-L-02
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-75-S-02
75		7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RTD-75-M-02
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-75-L-02

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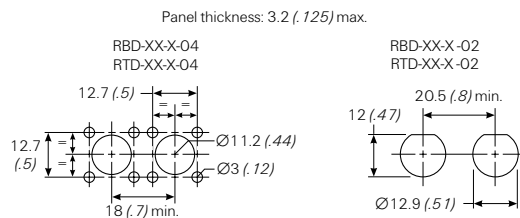
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Part number selection - TNC coaxial connectors

Cable type		Cable dimensions in millimeters (inches)					
Impedance (ohms)	RG cables	Raychem cables	D (min.-max.)	E (min.-max.)	F (max.)	G (max.)	Part Number
TNC straight jacks, Female contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-50-S-03
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RTD-50-M-03
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-50-L-03
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-75-S-03
75		7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RTD-75-M-03
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-75-L-03
TNC straight panel jacks, female contacts							
50	RG-174, RG-178, RG-188, RG-196, RG-316	5026A1311, 5028A1317, 5030A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-50-S-04
50	RG-58, RG-141, RG-142, RG-303, RG-400	5019D3318, 5021D1331, 5020A1311	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.0 (.118)	1.25 (.050)	RTD-50-M-04
50	RG-165, RG-215, RG-213, RG-225, RG-214	5012F3332, 5012A3311	5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-50-L-04
75	RG-179, RG-187	7530A1317	1.5-5.5 (.060-.217)	0.9-3.0 (.035-.118)	1.55 (.060)	0.65 (.025)	RTD-75-S-04
75		7524A1311, 7528A1317	3.5-7.0 (.138-.276)	2.1-5.0 (.083-.197)	3.7 (.146)	1.25 (.050)	RTD-75-M-04
75	RG-6, RG-11, RG-12, RG-59, RG-144, RG-216		5.0-12.5 (.197-.500)	4.1-9.5 (.161-.375)	7.3 (.287)	2.45 (.100)	RTD-75-L-04

Hole pattern for panel-mounted products (mm/in)



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