Series

600
600 S "Space Use"
610

Subminiature Coaxial Connectors 5 KVDC Rated Altitude • Space

GENERAL SPECIFICATIONS

Series 600

A complete line of subminiature coaxial high voltage connectors. The series 600 is rated at 5 KVDC for altitude operation over the temperature range of -55°C thru + 125°C. Various adapters are available on special order.

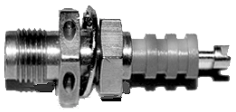
Series 600 S "Space Use"

Series 600 S "Space Rated" connectors are designed to operate over a long period of time in the hard vacuum of space. The operating voltage is 5 KVDC at a minimum vacuum of 10 millitorr to deep space. Series 600 S connectors and cable assemblies are not interchangeable with series 600 connectors or cable assemblies and should not be used in any application other than one with a minimum vacuum of 10 millitorr or in deep space.

Series 610

The series 610 has a larger coupling nut and threads than the series 600 and is recommended for airborne applications or any application where numerous mating operations are required. Series 600 and 610 connectors are not interchangeable and can therefore be used for polarization to prevent cross mating in multiple circuit applications.

Series 600 & 610 cable assemblies effect an altitude seal through the use of internal seals. This design feature allows the mated assemblies to operate at altitudes up to 70,000 ft. with no encapsulation within a temperature range of -55°C to + 125°C. While plugs (kits) are available for customer-fabricated cable assemblies, Reynolds highly recommends purchasing cable assemblies because of difficulties customers may experience in assembly and testing. Panel connectors require encapsulation at the junction of the terminal and the insulator.



Shown Actual size

Interface cleaning

High voltage connectors must always be cleaned prior to mating. The proper cleaning method is to wipe or spray the interface area with isopropyl alcohol and immediately blow an inert gas such as dry nitrogen over the interface area until dry. No other cleaning method should be attempted.

WARNING: These connectors should **NEVER** be handled, mated or unmated when voltage is applied.

GENERAL SPECIFICATION

	Series 600	Series 610
Sea level voltage rating	**10 KVDC**	**10 KVDC**
70,000 ft. altitude rating @-55°C to +125°C	**5 KVDC**	**5 KVDC**
Receptacle insulator material	**Plastic**	**Plastic**
Lock wire holes for hex plug & receptacle	**Yes**	**No**
Plug body material/finish	**Brass/Gold**	**Brass/Gold**
Hex threaded coupling material/finish	**Stainless steel/Passivated**	**Stainless steel/Passivated**
Knurled threaded coupling material/finish	**Brass/gold**	**N/A**
Male contact diameter (receptacle) inches/mm	**0.031/.79mm**	**0.031/.79mm**
Male & female contact material/finish	**Be Cu/Gold**	**Be Cu/Gold**
Cable (plug)	**Coax or non-shielded**	**Coax or non-shielded**
100% test voltage @ 70,000 ft. simulated altitude and ambient temperature:		
Receptacles	**15KVDC**	**15 KVDC**
Cable Assemblies	**15 KVDC**	**15 KVDC**

Cable Assembly Length vs Manufacturing Tolerance Chart

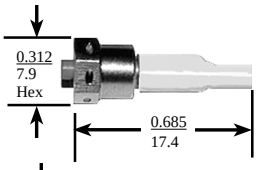
Length: feet/M	Tolerance: inches/mm
7.5/2.28 or less	0.25/6.3
7.5/2.2 to12.5/3.8	1.0/25.4
12.5/3.8 to 22.5/6.8	1.50/38.1
22.5/6.8 to 35/10.6	2.0/50.8
35/10.6 to 50/15.2	3.0/76.2
50/15.2 to 70/21.3	4.0/101.6
70/21.3 to 100/30.4	5.0/127

Series 600 5 KVDC

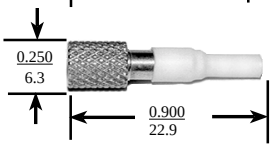
Altitude Rated to 70,000 Ft
Operating Temperature:
-55°C to +125°C

Plugs

P/N 178-7110 (shielded)
Hex coupling (CRES)



P/N 167-3770 (shielded)
Knurled coupling (brass)



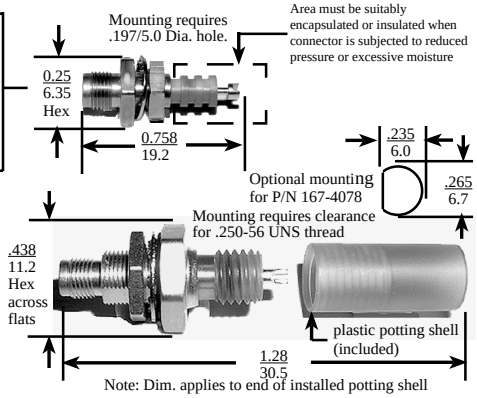
Operating voltage: 5 KVDC up to 70,000 ft.
Operating temperature: -55°C to +125°C
Shielded cable: Type "L" cable **P/N 167-2896.** For assembly instructions, see p. 45
Non-shielded cable: 0.100 Dia. FEP wire **P/N 167-9609** and 0.100 Dia. silicone rubber wire **P/N 167-9634.** For Assembly instructions: Contact factory
For bulk cable see p. 40

Receptacles

P/N 178-7111
Stainless steel body with lock wire holes

P/N 167-3771
Brass body. No lock wire holes.

P/N 167-4078
Brass body

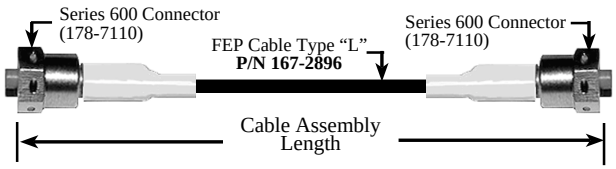


P/N 178-7111 Front mount, non-sealed connector. Stainless steel body. Lock wire holes
P/N 167-3771 Same as P/N 178-7111 except for brass body and no lock wire holes
P/N 167-4078 Rear mount sealed connector. Brass body
Pressure sealed for 15 psi differential pressure. Max. leakage: 1 X 10^{-6} cc/sec. He. No lock wire holes
Mating Connectors: Mates all series 600 cable connectors
Operating Voltage: 5 KVDC up to 70,000 ft.
Operating Temperature: -55°C to +125°C
Ordering: Specify Part Number

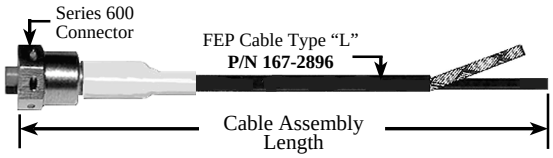
Production Testing (100%)
Receptacles: 15 KVDC @ 70,000 ft. simulated altitude and ambient temperature
Cable assemblies: 15 KVDC @70,000 ft. simulated altitude and ambient temperature

Cable Assembly Ordering Information
Order by Part Number
Use "F" for feet, "N" for inches.
Example: Cable Assembly 178-7034 10 feet 8 inches in length, is ordered as **P/N 178-7113-10F-8N**

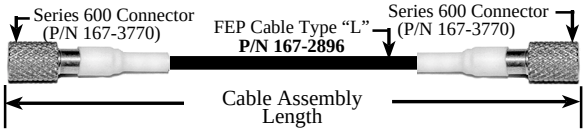
Cable Assemblies



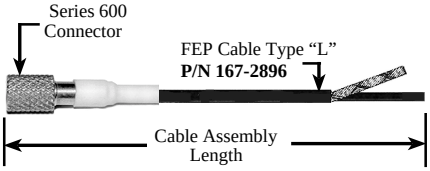
P/N 178-7113 Doubled Ended Coaxial Cable Assembly
Operating voltage: 5 KVDC up to 70,000 ft. @ -55°C to +125°C
Mates all series 600 panel connectors
Voltage test: See Production Testing, below
To order see ordering information
Bulk cable: See p. 40 for ordering and specifications



P/N 178-7115 Single-Ended Coaxial Cable Assembly (shown)
P/N 178-8210 Series 600 Non-Coaxial Single-Ended Cable Assembly (uses .100 Dia. FEP wire **167-9609**)
Operating voltage: 5 KVDC up to 70,000 ft. @ -55°C to +125°C
Voltage test: See Production Testing, below
Mates all series 600 panel connectors
To order, see ordering information
Bulk Ccable: See p. 40 for ordering and specifications



P/N 167-3306 Double-Ended Coaxial Cable Assembly
Operating voltage: 5 KVDC up to 70,000 ft. @ -55°C to +125°C
Voltage testing: See Production Testing, below
Mates all series 600 panel connectors
To order, see ordering information
Bulk cable: See p. 40 for ordering and specifications



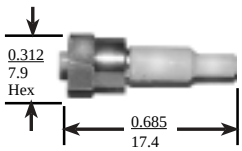
P/N 167-3305 Single-Ended Coaxial Cable Assembly (shown)
P/N 167-7667 Series 600 Single-Ended Non-Coaxial Cable Assembly. (Uses .100 Dia silicone wire **P/N 167-9634**)
Operating voltage: 5 KVDC up to 70,000 ft. @ -55°C to +125°C
Voltage testing: See Production Testing, left
Mates all series 600 panel connectors
Ordering: See cable assembly ordering information
Bulk cable: See p. 40 for ordering and specifications

Series 610 | **5 KVDC** Altitude Rated **Operating Temperature:** 55℃ to +125℃ | **600 S** "Space Use" | **5 KVDC** 10 millitorr to Deep Space

Series 610 — 5 KVDC Altitude Rated Connectors & Cable Assemblies

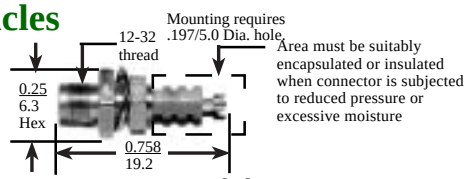
Plugs (Kit)

While Plugs (kits) are available for customer fabricated cable assemblies, Reynolds recommends purchasing cable assemblies because of difficulties customers may experience in assembly and testing.

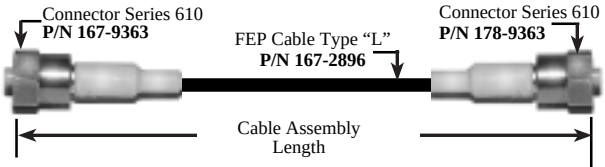


P/N 167-9363 Series 610 Hex CRES coupling nut
Operating voltage: 5 KVDC up to 70,000 ft.
Operating temperature: -55℃ to +125℃
Mating connector: Series 610 receptacles. Note: Will not mate series 600 connectors
Cable: Type "L" FEP shielded cable **P/N 167-2896**
For cable preparation & assembly instructions, see p. 45
Bulk cable: See p. 40 for ordering and specifications

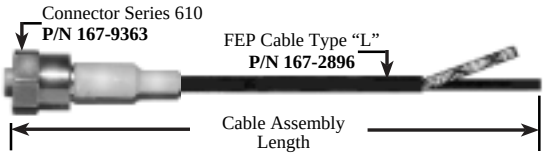
Receptacles



P/N 167-9364 Front mount, non-sealed connector. Brass body. No Lock wire holes
Operating voltage: 5 KVDC up to 70,000 ft.
Operating temperature: -55℃ to +125℃
Mating connectors: Mates all series 610 cable assemblies.
Note: Will not mate series 600 connectors
Ordering Connectors: Specify the Part Number



P/N 167-8920 Series 610 Double-Ended Coaxial Cable Assembly
Operating voltage: 5 KVDC up to 70,000 ft.
Operating temperature: -55℃ to +125℃
Test voltage:100% @ 15 KVDC 70,000 ft. simulated. Ambient temp.
Mates all series 610 receptacles
Ordering: See cable assembly ordering information, below
Bulk cable: See p. 40 for ordering and specifications

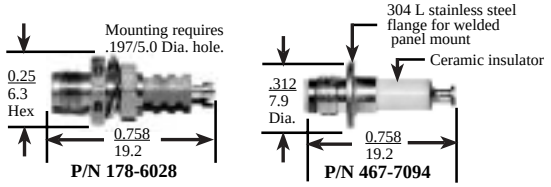


P/N 167-9487 Series 610 Single-Ended Coaxial Cable Assembly
Operating voltage: 5 KVDC up to 70,000 ft.
Operating temperature: -55℃ to +125℃
Test voltage: 100% @ 15 KVDC 70,000 ft. simulated. Ambient temp.
Mates all series 610 panel connectors
Ordering: See cable assembly ordering information, below
Bulk cable: See p. 40 for ordering and specifications

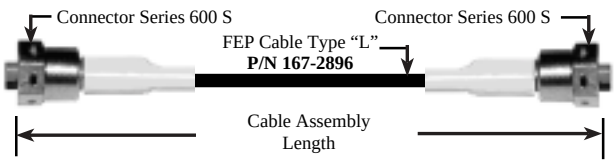
Series 600 S — 5 KVDC "Space Use" — 10 millitorr (min.) to Deep Space

A series of two receptacles and a cable assembly designed to operate at a minimum vacuum of 10 millitorr to deep space. The connectors have no seals and both plug and receptacle are vented to release any air trapped during pressure reduction associated with launch to deep space. Each receptacle is shipped with an interface seal which can be installed for necessary pre-launch voltage testing. The seal *must* be removed prior to launch.

Customers are strongly urged to discuss any potential useage of these connectors with a Reynolds applications engineer before purchasing or using the series 600 S in any space application.



P/N 178-6028 Front panel mount receptacle.
Gold plated brass vented body
P/N 467-7094 Front mount panel receptacle. Ceramic-to-metal hermetically sealed. Stainless steel vented body with weldable flange.
Leakage Rate: 1 X 10^{-8} cc/sec. He. (P/N 467-7094 only)
Test seal installation/removal tool: Order P/N 178-8608.
Seal installation/removal procedure: Contact Reynolds Contracts Department and request document R-631
Operating voltage: 5 KVDC @ minimum 10 millitorr.
Mating connectors: Cable assembly **P/N 178-6027** only



P/N 178-6027 Series 600 S Coaxial Cable Assembly
Operating voltage: 5 KVDC
Mates series 600 S receptacles, exclusively
Bulk Cable: See p. 40 for ordering and specifications

Cable Assembly Ordering Information
Order by Part Number
Use "F" for feet, "N" for inches.
Example: Cable Assembly 178-6027 10 feet 8 inches in length, is ordered as **P/N 178-6027-10F-8N**