

**31 SERIES**  
**310 SERIES**  
**311 SERIES**

6.5 kVDC

SEA LEVEL

15 kVDC

70,000 FT

-40° TO 85°C

POLARIZED

**SERIES 31 SEA LEVEL RATED**

These reliable coaxial connectors have been in production since 1950. Available as plug connectors, kits and cable assemblies, they mate all series 311 Cond. 1 connectors and adaptors.

**SERIES 310 FOR OPERATION AT REDUCED PRESSURE**

A sealed version of the series 31 that mates all series 311 Cond. 1 receptacles and adaptors.

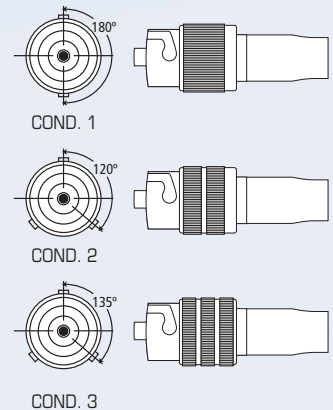
**SERIES 311 FOR OPERATION AT REDUCED PRESSURE**

This series features seals for reduced pressure operation, a shell-to-shell grounding spring finger shield, a hooded female socket and three polarizing conditions as shown in the illustration to the right, the bayonet coupling has machined rings to designate polarization by either sight or feel.

**311 SERIES POLARIZATION**

Series 311 connectors feature interface polarization which allows the system design engineer to use the same basic connector in three different circuits without concern of mismatching the circuits.

Polarization is controlled by the numbers and/or dissimilar spacing of the bayonet lugs on the receptacle. There are three conditions of polarization available.

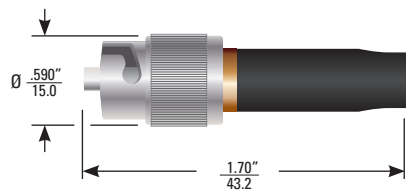


**PLUG KITS**

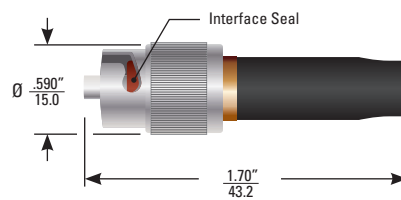
(Dimensions shown as in/mm)

**Shielded**

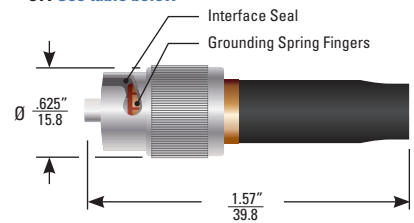
**31 167-0669** Uses Wire 167-2669



**310 167-4356** Uses Wire 167-2669  
**167-4419** Uses Wire 167-2896



**311 See table below**



- While plugs kits are available for customer-fabricated cable assemblies, Teledyne Reynolds highly recommends purchasing cable assemblies because of difficulties customers may experience in assembly and testing.
- 31 and 310 series plugs mate 311 series conditional polarized receptacles.

311 P/N	POLARIZATION	WIRE P/N
167-7624-1	1	167-2669
167-7624-2*	2	•
167-7624-3*	3	•
167-7918-1	1	167-2896
167-7918-2*	2	•
167-7918-3*	3	•

(• = Same value as above)

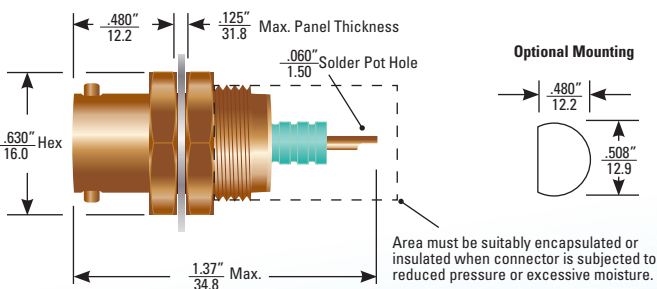
**RECEPTACLES**

**Polarized, Non-Sealed, Front Mount**

**311 COND. 1 167-7792**

**311 COND. 2\* 167-7793**

**311 COND. 3 167-7794**



• Panel Mounting Torque: 36 to 42 in-lbs

**Ceramic-to-Metal, Brazed Hermetic (Not Shown)**

**311 COND. 1\* 167-7605-1**

**311 COND. 2\* 167-7605-2**

**311 COND. 3\* 167-7605-3**

- Sealed for 1 ATM differential pressure
- **Mounting:** Weld Flange
- **Max. Leak Rate:** 1x10<sup>-8</sup> cc/s He @1 ATM differential pressure

\* Special order item

**CABLE ASSEMBLIES**

**Single-Ended, Shielded**



**Double-Ended, Shielded**



**Built Using 167-2669 Wire**

(• = Same value as above)

SERIES	POLARIZATION	SINGLE-ENDED	DOUBLE-ENDED
31	1	167-1617	167-1615
310	•	167-4360	167-4358
311	•	178-7032	178-7026
311*	2	178-7033	178-7027
311*	3	178-7034	178-7028

**Built Using 167-2896 Wire (Not shown)**

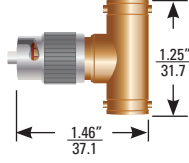
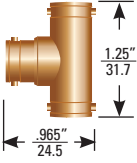
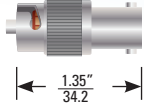
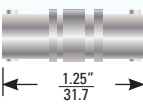
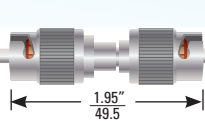
SERIES	POLARIZATION	SINGLE-ENDED	DOUBLE-ENDED
310*	1	167-4425	167-4424
311*	•	178-7035	178-7029
311*	2	178-7036	178-7030
311*	3	178-7037	178-7031

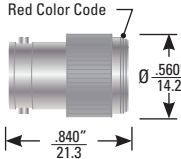
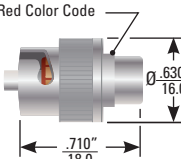
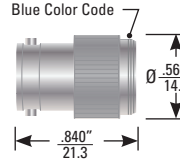
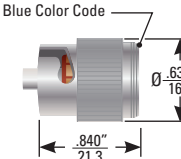
**\*\*Cable Assembly Ordering Information:** All cable assembly cable lengths are to be specified in inches only. For example, to order part number 178-6027 with a cable length of 10 feet 8 inches the cable assembly part number would be specified as 178-6027-128N.

• **Note:** Product numbers and specs subject to change without notice. • Products listed represent only a small selection of Teledyne Reynolds' products please visit [www.teledynereynolds.com](http://www.teledynereynolds.com) for the most up to date product information. • Contact Teledyne Reynolds' Engineering to discuss custom designs. **WARNING:** Connectors should **NEVER** be handled mated or unmated when voltage is applied.

### SPECIAL ORDER ADAPTORS

(Dimensions shown as in/mm)

 <p><b>"T" ADAPTOR MALE-FEMALE-MALE</b> COND. 1: 167-7825-1 COND. 2: 167-7825-2 COND. 3: 167-7825-3</p>	 <p><b>"T" ADAPTOR MALE-MALE-MALE</b> COND. 1: 167-7826-1 COND. 2: 167-7826-2 COND. 3: 167-7826-3</p>	 <p><b>STRAIGHT ADAPTOR FEMALE-MALE</b> COND. 1 to 2: 178-7146 COND. 1 to 3: 178-7152 COND. 2 to 1: 178-7157 COND. 2 to 3: 178-7162 COND. 3 to 1: 178-7158 COND. 3 to 2: 178-7163</p>	 <p><b>STRAIGHT ADAPTOR MALE-MALE†</b> COND. 1 to 1: 178-6484 COND. 1 to 2: 178-6485 COND. 1 to 3: 178-6486 COND. 2 to 1: 178-6487 COND. 2 to 2: 178-6487 COND. 2 to 3: 178-6488 COND. 3 to 1: 178-6489 COND. 3 to 2: 178-6489</p> <p>†Also available with gold plating.</p>	 <p><b>STRAIGHT ADAPTOR FEMALE-FEMALE</b> COND. 1: 178-7631-1 COND. 2: 178-7631-2 COND. 3: 178-7631-3</p>
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 <p><b>MALE SHORTING PLUG</b> COND. 1: 167-7905-1 COND. 2: 167-7905-2 COND. 3: 167-7905-3</p>	 <p><b>FEMALE SHORTING PLUG</b> COND. 1: 167-7903-1 COND. 2: 167-7903-2 COND. 3: 167-7903-3</p>	 <p><b>MALE PROTECTIVE COVER<sup>Δ</sup></b> COND. 1: 178-7058-1 COND. 2: 178-7058-2 COND. 3: 178-7058-3</p> <p><sup>Δ</sup>No electrical function.</p>	 <p><b>FEMALE PROTECTIVE COVER<sup>Δ</sup></b> COND. 1: 167-7864-1 COND. 2: 167-7864-2 COND. 3: 167-7864-3</p> <p><sup>Δ</sup>No electrical function.</p>
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### SPECIAL ORDER CONNECTORS & ADAPTORS (Not shown)

(• = Same value as above)

PART #	DESCRIPTION	PANEL MOUNT STYLE	POLARIZATION
178-7375	Receptacle	Rear	1
178-7376	•	•	2
178-7377	•	•	3
178-7023	Sealed Receptacle	•	1
178-7024	•	•	2
178-7025	•	•	3

PART #	DESCRIPTION	PANEL MOUNT STYLE	POLARIZATION
178-7370	Sealed Receptacle	Front	1
178-7371	•	•	2
178-7372	•	•	3
167-7904-1	Sealed Bulkhead feed-through Male-Male	•	1
167-7904-2	•	•	2
167-7904-3	•	•	3
167-7905-1	Hermetic Receptacle	•	1
167-7905-2	•	•	2
167-7905-3	•	•	3

### SERIES SPECIFICATIONS

(• = Same value as above)

Series	Voltage Rating (kVDC)	Altitude Rating (ft)	Operating Temp. (°C)	Current Rating (Amp)	Receptacle Insulator Material	Plug Insulator Material	Coupling Style	Coupling Nut Material/Finish	Plug Contact Material/Finish (Socket)	Recept. Contact Material/Finish (Pin)	Wire Type	Wire Insulation	Braid Termination	Test Voltage @ 70,000 ft	Test Voltage @ Sea Level
31	6.5	Sea Level	-40 to 85	10	Plastic or Ceramic	Plastic	Bayonet	Brass/Ni	BeCu/Au with CRES hood	Brass/Au or Kovar™	Shielded	PE	Crimp	N/A	7.5
310	15	70,000	•	•	•	•	•	•	•	•	•	FEP or PE	•	21	N/A
311	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

### WIRE SPECIFICATIONS

Part #	Operating Voltage (kVDC)	Conductor			Insulation		Shielding			Jacket		Impedance Ω	Attenuation dB/100 ft @ 400mhz	Capacitance pF/FT (Nom.) @1k HZ
		AWG	Strands	Plating	Material	ø in./mm	AWG	Plating	ø in./mm	Material	ø in./mm			
167-2896	18	26	19/38	SPC	FEP	0.050 / 1.27	36	SPC	0.075 / 1.91	FEP	0.095 / 2.41	46	25	33.7
167-2669	20	16	19/29	TPC	PE	0.118 / 3.00	•	TPC	0.150 / 3.81	PE	0.195 / 4.95	31	16	48

\* For reference, part numbers 167-2896 and 167-2669 are known as "Type L" cable and "Type C" cable, respectively. Kovar is a registered trademark of the Carpenter Technology Corporation.