HIGH VOLTAGE
SINGLE PIN & MULTI-PIN CONNECTORS

INTRODUCTION

Teledyne Reynolds' high voltage single and multi-pin connectors are known industry wide for their reliability in harsh environments, their small size compared to other manufacturer's connector designs for the same voltage rating and their outstanding quality.

This catalog contains a selection of single and multi-pin, high voltage connectors and cable assemblies. These products, some of which have been in production for more than sixty years, reflect the legacy of Teledyne Reynolds' strong commitment to engineering, quality and customer service.

Teledyne Reynolds, Inc. leads the connector industry worldwide in the design of high voltage connectors capable of operating at altitudes of 70,000 feet (21.34 km) and above while exposed to temperatures as low as -55°C and up to 125°C. Not all connectors in this catalog are designed to operate at those extremes, but all will perform with a high degree of reliability when operated as specified.

Within this catalog is also the Advanced Group of connectors that use Teledyne Reynolds' patented Advanced Interface Sealing System™. Technologically advanced, these connectors represent the state-of-the-art in high voltage connector design and manufacture.

TELEDYNE REYNOLDS
Everywhereyoulook™

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TECHNICAL DISCUSSION

Teledyne Reynolds, Inc. (TRI) pioneered the development of miniature high voltage connectors used within non-pressurized areas of high altitude flying aircraft over fifty years ago. This ingenuity is clearly evident in Teledyne Reynolds' patented Advanced Interface Sealing System™ that is used in the Advanced Group of connectors.

Users of high voltage connectors in the aerospace industry have long sought miniature high voltage connectors that can reliably operate at reduced atmospheric pressure, perform during temperature excursions of -55° to 125°C while at the same time reduce partial discharges to acceptable levels. TRI developed and patented the Advanced Interface Sealing System™ to satisfy all of these requirements through the use of a very small, elastomeric interface seal as the key component of the sealing system.

The following is a discussion on the evolution of high voltage connector interfaces and important criteria for high voltage system engineers to consider when selecting interconnect solutions.

DESIGN HISTORY OF HIGH VOLTAGE CONNECTOR INTERFACES

High voltage connectors consist of some of the same components as general purpose connectors. There are, however, fundamental differences that set them apart. The Advanced Interface Sealing System™ is the latest in the evolution of high voltage connector interfaces developed at Teledyne Reynolds.

GENERATION 1

These connectors, designed for sea level use, were the industry standard prior to 1960. Whenever the connectors were required to operate at reduced atmospheric pressure, the recommended procedure was to apply generous amounts of silicone grease to the interface of the receptacle.

GENERATION 2

TRI modified the Generation 1 interfaces by adding molded annular seals to the rubber nose of the plug to provide an altitude seal. This worked well except that reliability became marginal at extremely cold temperatures. Teledyne Reynolds later developed and introduced a special compound of silicone rubber which improved performance under these conditions.

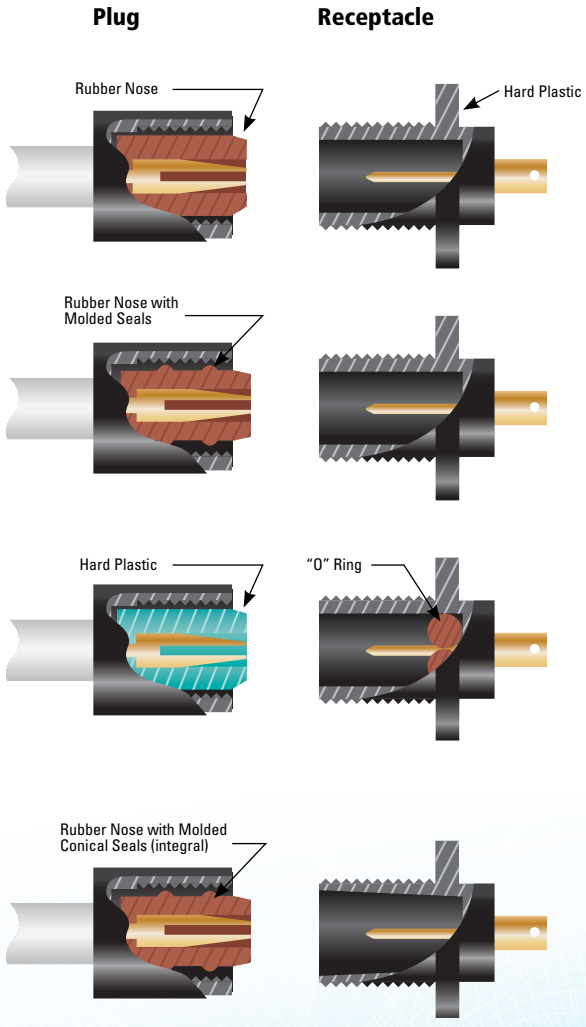
GENERATION 3

In 1963, Teledyne Reynolds introduced a sub-miniature high voltage connector in which a hard plastic nose was used to compress an o-ring at the base of the male receptacle pin to provide an altitude seal. This same interface concept was then used by other high voltage connector manufacturers, but the design can lead to compression set of the o-ring after exposure to numerous temperature cycles.

GENERATION 4

These connectors use a conical interface design that works well at reduce pressures; even though compression set of the elastomer plug insulator can create the same compression set problems experienced with the Generation 3 interface. TRI significantly improved upon the design by incorporating molded-in-place annular o-rings in the silicone rubber plug insulator. In addition, a spring loaded coupling ring was added to the plug design to compensate for the compression set of the plug's insulator.

As a result, the increased performance and reliability has made the Generation 4 interface widely used by TRI in multi-pin connectors.



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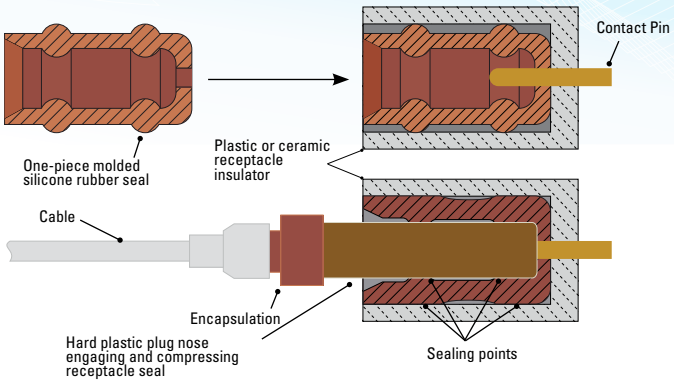
GENERATION 5

The Generation 5 is the state-of-the-art of high voltage connector and interface design. This is due to the Advanced Interface Sealing System™ that was invented, developed and placed into production by Teledyne Reynolds in the 1980's. The advent of this unique system of high voltage interface sealing solved nearly every known disadvantage of all the generations of interface designs that preceded it in the field of aerospace high voltage connectors.

The capability of the Advanced Interface Sealing System™ to be scaled up or down in size, depending on the operating voltage, provides system designers flexibility never before afforded in the selection of high voltage connectors and cable.



ADVANTAGES OF THE ADVANCED INTERFACE SEALING SYSTEM™

Teledyne Reynolds, Inc. pioneered the development of miniature high voltage connectors used within non-pressurized areas of high altitude flying aircraft over fifty years ago. This ingenuity is clearly evident in Teledyne Reynolds' Advanced Interface Sealing System™ that is used in the Advanced Group of connectors. The Advanced Group consists of a series of nine connector families, five of which are included this brochure.

The following are the more significant advantages of selecting from the Advanced Group of high voltage connectors.

REPAIRABLE / REPLACEABLE

The seals are molded from a proprietary blend of high grade silicone rubber which allows the seal to function over a temperature range of -55° to 125°C. Because the seal is a separate component of the connector, it can be individually inspected, tested and installed. In addition, if necessary a damaged seal can be removed and replaced. This is not the case in conventional high voltage connectors where the insulator is one piece and a failure of any one pin or circuit usually results in the entire connector or, worse yet, a total cable assembly being scrapped or subjected to a costly repair operation.

SCALABLE

The unique design of the Advanced Interface Sealing System™ permits the size of the seal and the connector to be scaled up or down to accommodate higher or lower operating voltages and larger or smaller mounting spaces. Our largest seal is in the Max and Maxxum series and the smallest in the JR series. This enables a high degree of customization to meet evolving customer needs.

MATING FORCE

Conventional high voltage connectors require very high mating torque levels in order to effect and maintain an axial high voltage seal. In addition, they must continually compensate for the effects of compression set which is common in connectors using a cone shape or axial compression to achieve a seal. Compensating devices are expensive, bulky and often require special tools and even gauges to reliably mate the connectors.

Connectors using the Advanced Interface Sealing System™ require no undue mating forces and no compensation is ever required to maintain the integrity of the mated interface seal. In fact, once these connectors are fully mated, they need only be sufficiently held in place to resist severe vibration and shock. This is due to the use of redundant radial seals in the Advanced Interface Sealing System™. Once the hard plastic insulator of the plug engages the radial rings on the receptacle seal, the high voltage interface seal is complete and will remain so until the plug insulator is withdrawn during any subsequent un-mating operation. The engagement of the seal is illustrated in Figure 1.

WIRE

Smaller connectors need smaller, reliable high voltage wire and cable. Therefore, concurrent with the development of the Advanced Interface Sealing System™ TRI developed high performacne, small diameter wire and cable to be compatible with the miniature connectors in the Advanced Group series. Another result of this effort was the development of a method of treating or coating the surface of a fluoropolymer insulated wire to promote a strong dielectric bond when potted or encapsulated.

HIGH ALTITUDE OPERATION

The operational requirements for electrical connectors of today's military, aerospace and space industries dictate the need for simultaneous solutions of mechanics, electronics, materials and processes. Nowhere else in the connector industry do these multi-engineering disciplines require more diligence than the solution to high voltage airborne and space rated connector applications.

Teledyne Reynolds pioneered the development of miniature high voltage connectors for use within non-pressurized areas of high altitude flying aircraft over fifty years ago. To help understand the problem, one must look at what happens as a high performance aircraft climbs to and operates at typical altitudes of 30,000 to 70,000 feet.

At these altitudes air pressure is less than a quarter of that at sea level and, as air pressure reduces with altitude, the accompanying dielectric strength, or the resistance to arcing, decreases.

ARCING DUE TO REDUCED ATMOSPHERIC PRESSURE

In low voltage electrical connector applications (less than 500 volts DC), reduced air pressure presents little concern or special design considerations. But taking, for example, a high voltage connector operating requirement of 10,000 volts DC, the creep path (arc distance) between two conductors at sea level would be a half of an inch, and at 70,000 feet it would be a minimum of five inches.

Therefore, if no solution were possible other than the lengthening of creep path, aerospace high voltage connectors would occupy an unreasonable volume and be extremely heavy.

THE SOLUTION

To eliminate the need for a lengthened creep path, precision silastic seals are incorporated within the connector, effectively blocking high voltage creep at reduced air pressure. Another problem that must be considered is that of temperature swings between -55° to 125°C typical of aerospace applications.

Elastomeric materials at these temperatures exhibit compression set, or loss of memory between hot and cold cycles, which can result in voltage creep or breakdown through or along the surface of the elastomeric dielectric. Through proper selection and formulation of elastomeric materials designed to the optimum shape, TRI connectors can effectively meet the simultaneous exposure of reduced pressure and hot to cold cycling.

CONNECTOR SELECTION CRITERIA

The following are the key parameters for system engineers in need of high reliability, high voltage interconnects to consider when selecting high voltage connectors and cable from this catalog.

DC VOLTAGE RATING

All the connectors, cable assemblies and cable presented in this catalog have a recommended steady state DC voltage rating. The voltage ratings are based on a number of critical factors:

- Operating altitude
- Thickness of the dielectric material between the contact(s) and the shell
- Type of dielectric material
- Length of the sealed surfaces at the connector interface
- Geometry of the contacts and cable
- Amount of partial discharge present.

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DC VOLTAGE RATING (CONTINUED)

There are two mechanisms for dielectric failure in a cable assembly: Thermal degradation and gradual degradation of the material by partial discharge. If a cable assembly operates below the voltage that sustains partial discharge, then only the connector insulation components need to be considered in the cable assembly design.

As a quality control procedure, each of TRI's products are, as a minimum, subjected to a dielectric strength test. The purpose of this test is to subject the cable assembly to a voltage greater than the designed operating voltage. The dielectric strength test values typically used at TRI are:

DC RATING	TEST VOLTAGE
0 to 12 kVDC	150% of rated voltage
12.1 to 20.0 kVDC	140% of rated voltage
20.1 to 30.0 kVDC	130% of rated voltage
30.1 kVDC and up	120% of rated voltage

CURRENT

The steady state current rating depends on conductor material, cross-sectional area, thermal capability and resistivity of the insulation and the proximity of other conductors. The listed current ratings in this catalog for single and multi-pin connectors are per pin. Based on the user's specific application, additional derating may be required.

ENVIRONMENTAL

Altitude

- Maximum operating altitude

Temperature

- Storage, transient and operating temperatures need to be specified, with dwell times if known, in order to select the correct insulation materials.

Humidity and Moisture

- Military Standards should be specified when applicable.

Radiation

- Specify the type, level and dose rate.

Hermeticity

- Specify any differential pressure condition and the acceptable leak rate.
- Specify whether a solder or weld flange is required.

Hot and Cold Cycling

- If hot and cold cycling is required, specify extremes, dwell time, rate of change and number of cycles.

Dielectric Fluids and Gases

- Fluids should be specified with the degree of exposure. Exposure can range from vapors, to splash, to total immersion.
- Specify whether or not the connector is required to seal the dielectric from escaping.

TECHNICAL DISCUSSION

MECHANICAL

Size

- Specify the maximum envelope size for the connector plug, receptacle and the mated pair of connectors.

Vibration and Shock

- Unusual or excessive vibration or shock levels will require an engineering analysis.

Cable Routing

- Whenever possible, a mock-up of the cable or harness assembly should be made to observe possible abrasion points, cutting surfaces and excessively acute bends.

Flexing

- Specify rate, degree and axis of flexure
- Specify position of flexing along the cable with respect to the connector

SELECTION ASSISTANCE

Teledyne Reynolds' Engineering Department personnel and your local TRI Manufacturer's Representative or Distributor will assist you in selecting the best interconnect solution for your application.

In the event that a catalog connector or cable assembly will not satisfy your requirements, we will be pleased to submit a proposal for a design to meet your requirements.

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.

For any cable assemblies part numbers starting with a "700" prefix, such as 700039, the order part number is designated using the following part number sequence:

Base Part Number - Color Code - Cable Length (inches)

The **Color Code**, or cable color, is specified by adding a dash and a two digit code (per the table below) to the Base Part Number.
The **Cable Length** is specified in inches by adding a dash and four digits after the Color Code. For example, 700039-09-0120 is a 120 inch cable assembly built with white wire.

Please contact Teledyne Reynolds' Engineering department if you have any questions or need further clarification.

00 BLACK	02 RED	04 YELLOW	06 BLUE	08 GRAY	10 NATURAL
01 BROWN	03 ORANGE	05 GREEN	07 VIOLET	09 WHITE	

Cable Assembly Length Tolerance (typical)
Length (shown as "***" dimension throughout catalog)

7 1/2' or less	+/- 1/4"
7 1/2' to 12 1/2'	+/- 1"
12 1/2' to 22 1/2'	+/- 1 1/2"
22 1/2' to 35'	+/- 2"
35'to 50'	+/- 3"
50'to 70'	+/- 4"
70' to 100'	+/- 5"

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PRODUCT MATRIX

Series	Voltage Rating (kVDC)	Rated for 70,000 ft	Current Rating (Amps)*	Number of Contacts	Advanced Series	Coupling Method	Shielded	Ceramic Feedthrough	Bag Assembly**	Temp. Rating (°C)
600†	5	Yes	5	1		Threaded	Yes	Yes	Yes	-55 to 125
610	5	Yes	5	1		Threaded	Yes		Yes	-55 to 125
JR	6	Yes	3	4 & 6	Yes	Push-on/Pull-off & Jack Screw	Yes			-55 to 125
31	6.5		10	1		Bayonet	Yes	Yes	Yes	-40 to 85
600 SL	10		5	1		Threaded	Yes		Yes	-55 to 125
610 SL	10		5	1		Threaded	Yes		Yes	-55 to 125
531 SL	10		10	1		Bayonet	Yes		Yes	-40 to 85
730/830	10	Yes	13	1		Threaded		Yes	Yes	-55 to 125
C 730	10	Yes	13	1		Threaded	Yes			-55 to 95
1407	10	Yes	10	7		Bayonet	Yes		Yes	-55 to 125
PeeWee†	12	Yes	5	1	Yes	Push-on/Pull-off & Threaded		Yes		-55 to 125
Hi/Mate™	13.5	Yes	5	Various	Yes	MIL-DTL-38999				-55 to 125
Hi/Mate$_D$™	13.5	Yes	5	Various	Yes	D-Sub				-55 to 125
310	15	Yes	10	1		Bayonet		Yes	Yes	-40 to 85
311†	15	Yes	10	1		Bayonet	Yes	Yes	Yes	-40 to 85
531	15	Yes	10	1		Bayonet	Yes		Yes	-40 to 85
737	15	Yes	13	1		Threaded			Yes	-55 to 125
C 737	15	Yes	13	1		Threaded	Yes			-55 to 95
SID	15	Yes	7.5	4		Push-on/Pull-off				-40 to 95
1804	15	Yes	13	4		Bayonet & Threaded	Yes		Yes	-55 to 125
1807	15	Yes	13	7		Bayonet & Threaded	Yes		Yes	-55 to 125
Century+	18	Yes	5	1	Yes	Threaded	Yes	Yes		-55 to 125
521 SL	20		17	1		Bayonet	Yes		Yes	-40 to 85
720	20	Yes	13	1		Threaded		Yes	Yes	-55 to 125
C 720	20	Yes	13	1		Threaded	Yes			-55 to 125
521	25	Yes	17	1		Bayonet	Yes		Yes	-40 to 85
727	25	Yes	13	1		Threaded			Yes	-55 to 125
C 727	25	Yes	13	1		Threaded	Yes			-55 to 95
Maxxum	25	Yes	13	1	Yes	Threaded	Yes	Yes		-55 to 125
C 735	30	Yes	13	1		Threaded	Yes			-55 to 95
C 740	40	Yes	13	1		Threaded	Yes			-55 to 95
C 750	50	Yes	13	1		Threaded	Yes			-55 to 95

Teledyne Reynolds welcomes the opportunity to submit alternate design proposals when our standard items do not satisfy your requirements.

*Current rating is per pin for multi-pin connectors. Based on your specific application, additional derating may be required.

**Bag assemblies enable customers to build their own cable assemblies using assembly instructions found at www.teledynereynolds.com. Wire is not included in kits and may be ordered separately from Teledyne Reynolds. Although this option is available, Teledyne Reynolds highly recommends purchasing already built cable assemblies because of difficulties customers may experience in assembly and testing.

†Information on the Series 600 SQ, PeeWee SQ and 311 SQ can be found in the Space Qualified (SQ) Products catalog.

The 600 and 600 SL series are a complete line of subminiature, coaxial, high voltage connectors. In production since 1964, these connectors have proven to be extremely reliable in a variety of both, Aerospace/Defense and high-end commercial applications. The 600 series is also the smallest coaxial, high voltage connector rated for use at 70,000 ft available on the market.

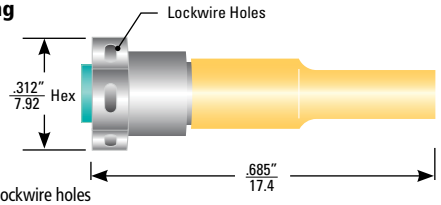
Information on the Space Qualified (SQ) 600 SQ series can be found in Teledyne Reynolds' Space Qualified Products catalog.

PLUG KITS

(Dimensions shown as in/mm)

Shielded, Hex Coupling

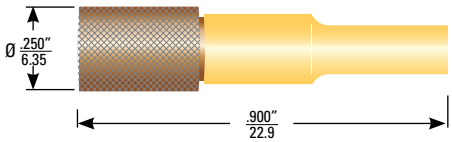
178-7110



- Stainless steel coupling nut, lockwire holes
- Plug kits mate both 600 and 600 SL receptacles

Shielded, Knurled Coupling

167-3770



- Gold-plated, brass body and knurled coupling nut, no lockwire holes

Uses Shielded Wire: 167-2896

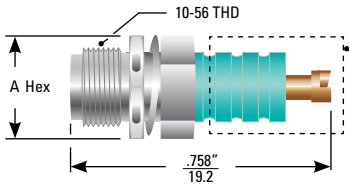
- For non-shielded version use wire 167-9634 or 167-9609.
- While plugs kits are available for customer-fabricated cable assemblies, Teledyne Reynolds highly recommends purchasing cable assemblies because of difficulties customers may experience in assembly and testing.
- Assembly instructions can be found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.

Note: It is not recommended to mate the stainless steel coupling nut plugs with the gold plated, brass body receptacles. Likewise with the gold plated coupling nut plugs and stainless steel receptacles.

RECEPTACLES

Non-Sealed, Front Panel Mount

600 178-7111 & 167-3771
600 SL 700032 & 700041

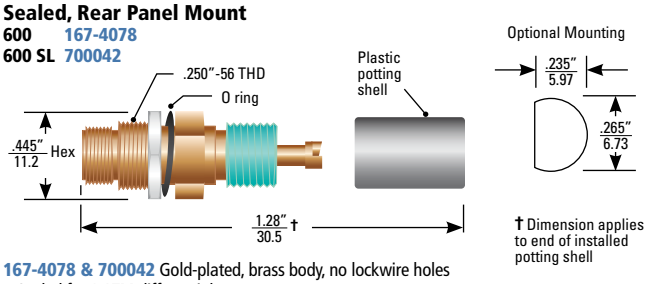


178-7111 & 700032 Stainless steel body, lockwire holes. "A" is .312" (7.92mm)
167-3771 & 700041 Same as 178-7111 & 700032 except for "A" is .250" (6.35mm), gold plated, brass body and no lockwire holes

- **Mating Torque:** 2 to 3 in-lbs
- **Mounting:** Requires .197" (5.0 mm) diameter hole
- **Panel Mounting Torque:** 8 to 10 in-lbs

Sealed, Rear Panel Mount

600 167-4078
600 SL 700042

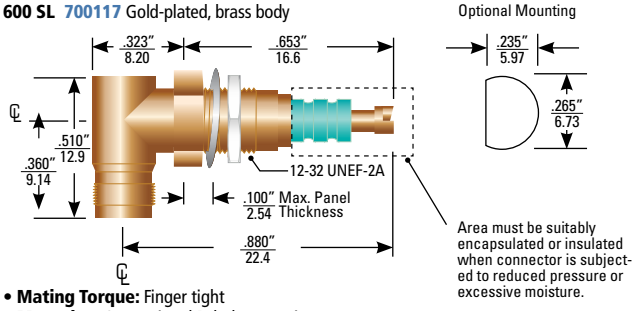


167-4078 & 700042 Gold-plated, brass body, no lockwire holes

- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** $1x10^{-6}$ cc/s He @ 1 ATM differential pressure
- **Mating Torque:** Finger tight
- **Mounting:** Requires clearance for .250"-56 UNS thread or optional "D" hole (shown)
- **Panel Mounting Torque:** 8 to 10 in-lbs

Right Angle, Non-Sealed, Front Mount

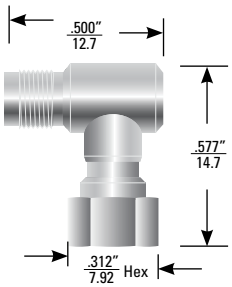
600 167-9220 Gold-plated, brass body
600 SL 700117 Gold-plated, brass body



- **Mating Torque:** Finger tight
- **Mounting:** See optional D-hole mounting
- **Panel Mounting Torque:** 8 to 10 in-lbs

Right Angle Adapter

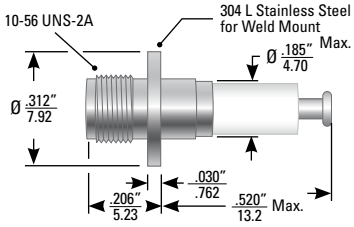
600 178-7414 Stainless steel body, hex nut, no lockwire holes.



- **Mating Torque:** 2 to 3 in-lbs

Ceramic-to-Metal, Brazed Hermetic

600 467-7029 Weld Flange
467-7009 Solder Flange (Not shown)



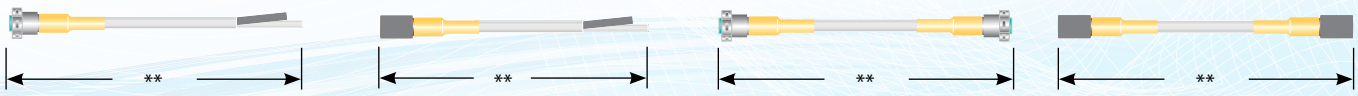
- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** $1x10^{-8}$ cc/s He @1 ATM differential pressure
- **Mating Torque:** 2 to 3 in-lbs

CABLE ASSEMBLIES

Single-Ended Shielded, Pigtailed

Hex Plug
600 178-7115
600 SL 700035

Knurled Plug
600 167-3305
600 SL 700039



Double-Ended Shielded

Hex Plug
600 178-7113
600 SL 700034

Knurled Plug
600 167-3306
600 SL 700036

Single-Ended, Non-Shielded (Not shown)

Hex Plug
600 178-8210
600 SL 700043
Uses .100" (2.54 mm) Dia. FEP Wire 167-9609

Knurled Plug
600 167-7667
600 SL 700044
Uses .100" (2.54 mm) Dia. Silicone Wire 167-9634

• **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 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.**

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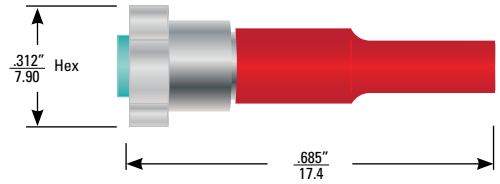
The 610 and 610 SL series have a larger coupling nut and threads than the 600/600 SL series and are recommended for airborne applications or any application where numerous mating operations are required. The difference in threads between the 600/600 SL and 610/610 SL connectors can be used as "polarization" to prevent cross mating in multiple circuit applications, since they are not intermateable.

Series 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° to 125°C.

PLUG KITS

Shielded, Hex Coupling
167-9363



- Stainless steel body, no lockwire holes
- Plug kits mate both 610 and 610 SL receptacles

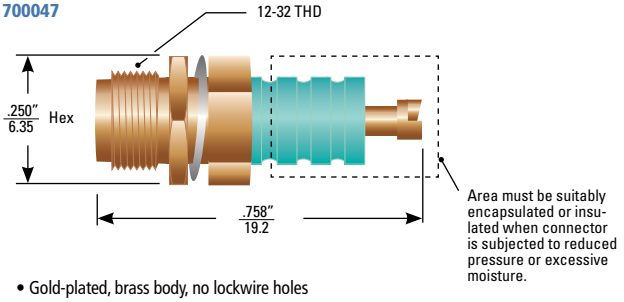
Uses Shielded Wire: 167-2896

While plug 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.

RECEPTACLES

(Dimensions shown as in/mm)

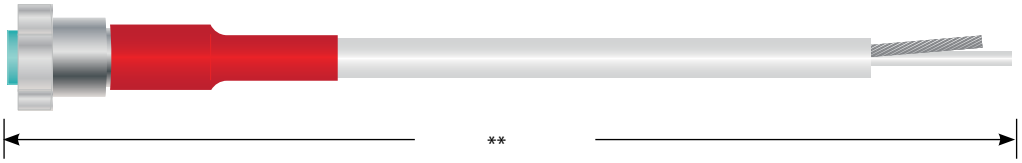
Non-Sealed, Front Panel Mount
610 167-9364
610 SL 700047



- Gold-plated, brass body, no lockwire holes
- **Mating Torque:** 3 to 4 in-lbs
- **Mounting:** Requires .197" (5.0 mm) dia. hole
- **Panel Mounting Torque:** 12 to 14 in-lbs

CABLE ASSEMBLIES

Single-Ended, Shielded, Pigtailed
610 167-9487
610 SL 700049



Double-Ended, Shielded
610 167-8920
610 SL 700048

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	(kVDC) Test Voltage @ 70,000 ft	(kVDC) Test Voltage @ Sea Level
600	5	70,000	-55 to 125	5	Plastic or Ceramic	Plastic	Threaded	Brass/Au or CRES	BeCu/Au with CRES hood	Brass/Au or Kovar®	Shielded or Non-shielded	FEP or Silicone	Solder	7.5	N/A
600 SL	10	Sea Level	•	•	•	•	•	•	•	•	Shielded	FEP	•	N/A	15
610	5	70,000	•	•	Plastic	•	•	•	CRES	•	•	•	•	7.5	N/A
610 SL	10	Sea Level	•	•	•	•	•	•	•	•	•	•	•	N/A	15

WIRE SPECIFICATIONS

Part Number	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			
167-9634	10	20	19/30	SPC	Silicone	0.100 / 2.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
167-2896*	18	26	19/38	•	FEP	0.050 / 1.27	36	SPC	0.075 / 1.91	FEP	0.095 / 2.41	46	25	33.7
167-9609	30	20	19/32	TPC	•	0.100 / 2.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

* For reference, part number 167-2896 is known as "Type L" cable.
Kovar is a registered trademark of the Carpenter Technology Corporation.

The JR Series of subminiature high voltage cable assemblies that utilize Teledyne Reynolds' patented Advanced Interface Sealing System™ are ideally designed to interconnect, mini-TWTs to power supplies in radar, missile seeker or Electronic Countermeasure (ECM) systems. Since their introduction, these high contact density assemblies have also found applications in laser systems, photomultiplier (PMT) detection systems, night vision systems, Space instruments and other applications where high voltage in a small package with a highly, flexible cable harness is required.

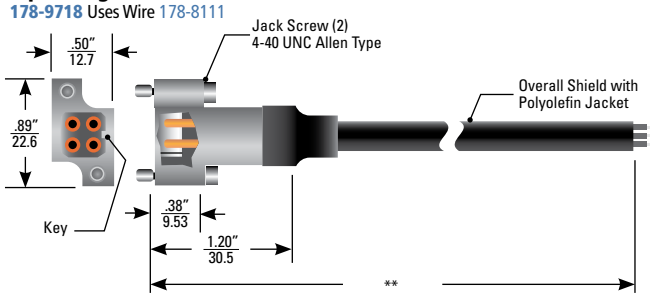
JR Series connectors are only available as pre-assembled plug or receptacle cable assemblies with each assembly wired with Teledyne Reynolds' Ready-to-Bond™ etched FEP or silicone coated, FEP wire. Both shielded and un-shielded configurations are available.

PLUG CABLE ASSEMBLIES

(Dimensions shown as in/mm)

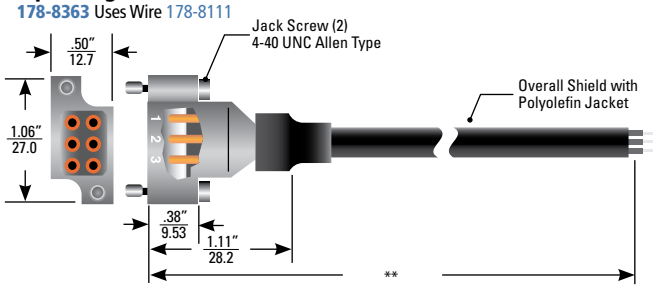
4-pin, Single-Ended, Shielded

178-9718 Uses Wire 178-8111



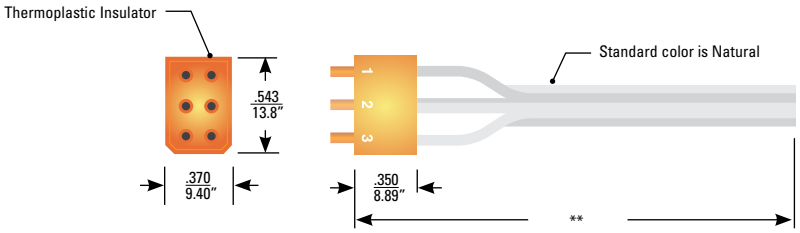
6-pin, Single-Ended, Shielded

178-8363 Uses Wire 178-8111



6-pin, Single-Ended, In-line

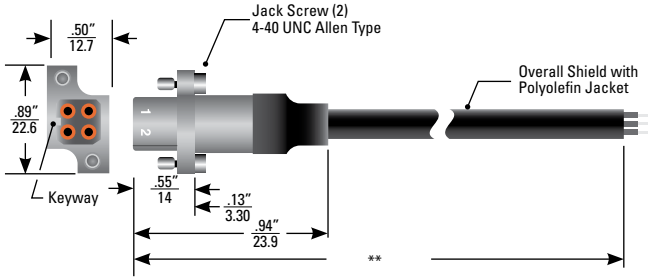
700631 Uses Wire 178-8410



RECEPTACLE CABLE ASSEMBLIES

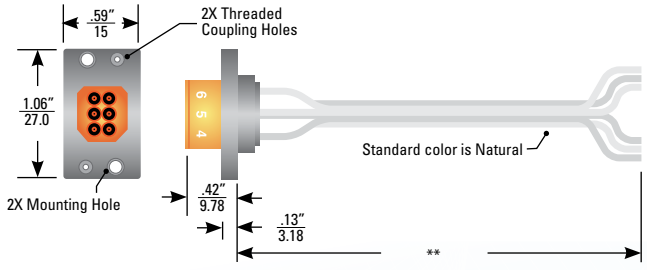
4-pin, Single-Ended, Shielded, Rear Mount

178-9719 Uses Wire 178-8111



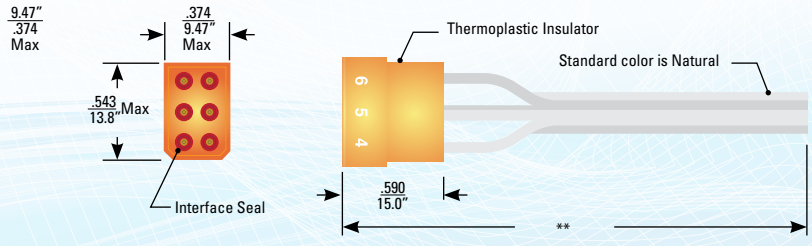
6-pin, Single-Ended, Front Mount

178-8362 Uses Wire 178-8410



6-pin, Single-Ended, In-line

700630 Uses Wire 178-8410



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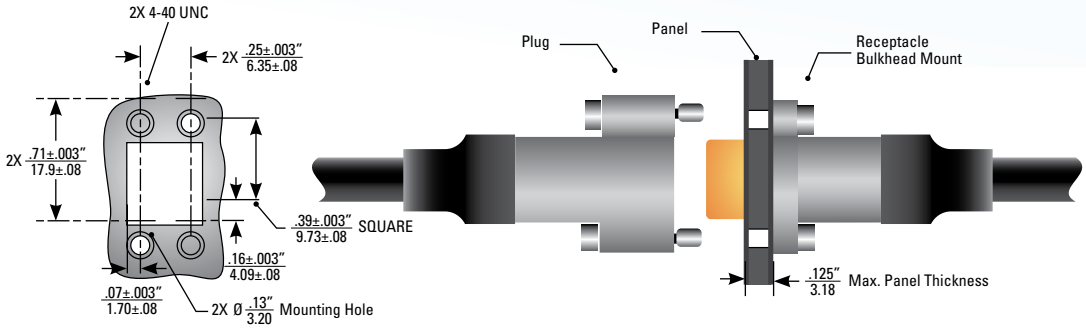
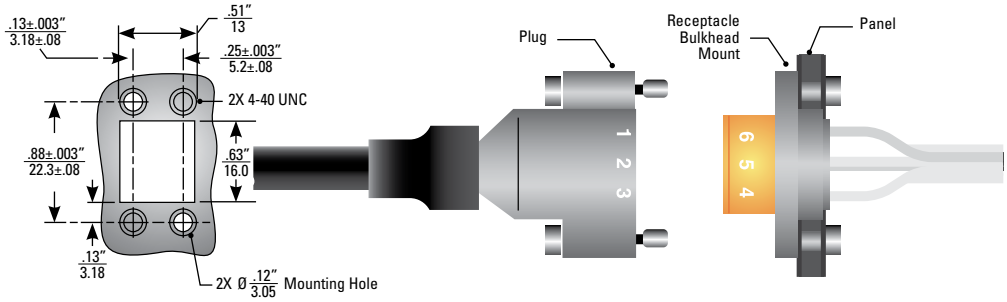
PANEL CUTOUT DIMENSIONS AND MOUNTING EXAMPLES

(Dimensions shown as in/mm)

4-pin



6-pin



SERIES SPECIFICATIONS

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 (kVDC)	Test Voltage @ Sea Level (kVDC)
JR	6	70,000	-55 to 125	3†	Plastic	Plastic	Jack Screw	Al/Ni	BeCu/Au with CRES hood	Brass/Au	Shielded or Non-shielded	FEP	Crimp	9	N/A

WIRE SPECIFICATIONS

(• = Same value as above)

Part Number	Operating Voltage (kVDC)	Conductor			Insulation		Shielding			Jacket		Impedance Ω	Attenuation dB/100 ft @ 400 MHz	Capacitance pF/ft (Nom.) @ 1 kHz
		AWG	Strands	Plating	Material	ø in./mm	AWG	Plating	ø in./mm	Material	ø in./mm			
178-8111	18	24	19/36	SPC	Etched FEP	0.050 / 1.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
178-8410	•	•	•	•	Silicone Coated FEP	0.058 / 1.48	•	•	•	•	•	•	•	•

†Current rating is per pin for multi-pin connectors. Based on your specific application, additional derating may be required.
**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 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.**

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

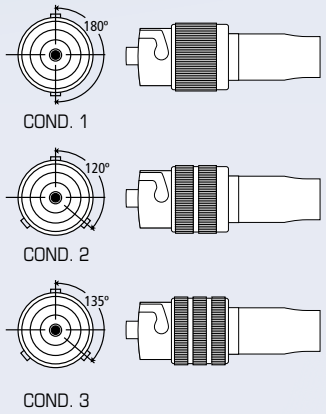
This series features seals for reduced pressure operation, a shell-to-shell grounding spring finger shield, a hooded female socket and three polarizing conditions as shown in the illustration to the right, the bayonet coupling has machined rings to designate polarization by either sight or feel.

Information on the Space Qualified (SQ) 311 SQ series can be found in Teledyne Reynolds' Space Qualified Products catalog.

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 mismating 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.

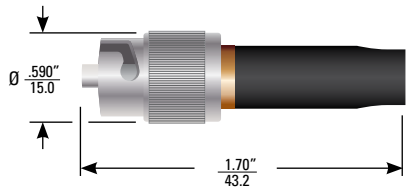


PLUG KITS

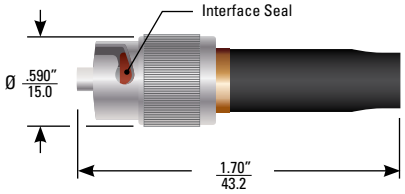
(Dimensions shown as in/mm)

Shielded

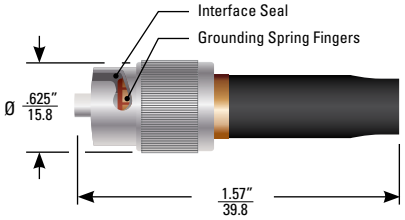
31 167-0669 Uses Wire 167-2669



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.
- Assembly instructions can be found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.
- 31 and 310 series plugs mate 311 series conditional polarized recepticles.

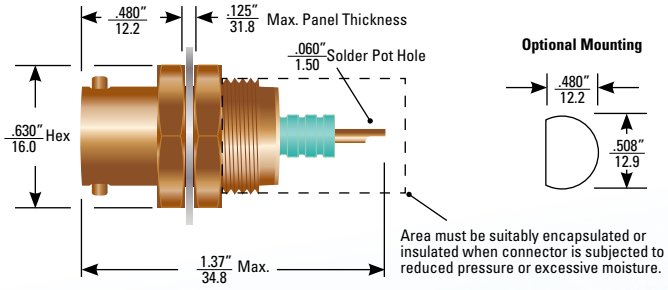
311 P/N	POLARIZATION	WIRE P/N
167-7624-1	1	167-2669
167-7624-2*	2	•
167-7624-3*	3	•
167-7918-1	1	167-2896
167-7918-2*	2	•
167-7918-3*	3	•

(• = 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)

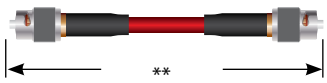
311 COND. 1* 167-7605-1
311 COND. 2* 167-7605-2
311 COND. 3* 167-7605-3

- Sealed for 1 ATM differential pressure
- **Mounting:** Weld Flange
- **Max. Leak Rate:** $1x10^{-8}$ cc/s He @1 ATM differential pressure

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

*** Special order item**

****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 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.

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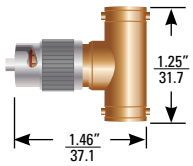
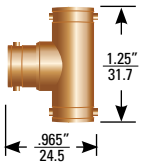
SPECIAL ORDER ADAPTORS

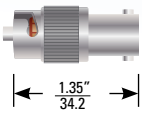
(Dimensions shown as in/mm)



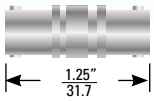
"T" ADAPTOR MALE-FEMALE-MALE
COND. 1: 167-7825-1
COND. 2: 167-7825-2
COND. 3: 167-7825-3



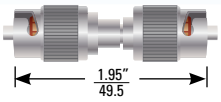
"T" ADAPTOR MALE-MALE-MALE
COND. 1: 167-7826-1
COND. 2: 167-7826-2
COND. 3: 167-7826-3



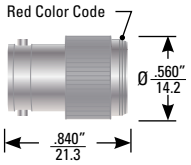
STRAIGHT ADAPTER FEMALE-MALE
COND. 1 to 2: 178-7146
COND. 1 to 3: 178-7152
COND. 2 to 1: 178-7157
COND. 2 to 3: 178-7162
COND. 3 to 1: 178-7158
COND. 3 to 2: 178-7163



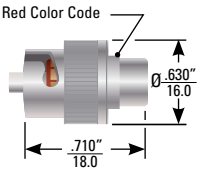
STRAIGHT ADAPTER MALE-MALE†
COND. 1 to 1: 178-6484
COND. 1 to 2: 178-6485
COND. 1 to 3: 178-6486
COND. 2 to 2: 178-6487
COND. 2 to 3: 178-6488
COND. 3 to 3: 178-6489
†Also available with gold plating.



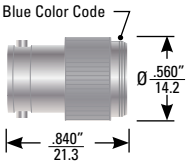
STRAIGHT ADAPTER FEMALE-FEMALE
COND. 1: 178-7631-1
COND. 2: 178-7631-2
COND. 3: 178-7631-3



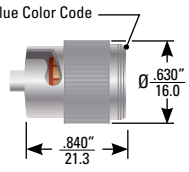
MALE SHORTING PLUG
COND. 1: 167-7905-1
COND. 2: 167-7905-2
COND. 3: 167-7905-3



FEMALE SHORTING PLUG
COND. 1: 167-7903-1
COND. 2: 167-7903-2
COND. 3: 167-7903-3



MALE PROTECTIVE COVER$^{\Delta}$
COND. 1: 178-7058-1
COND. 2: 178-7058-2
COND. 3: 178-7058-3
$^{\Delta}$No electrical function.



FEMALE PROTECTIVE COVER$^{\Delta}$
COND. 1: 167-7864-1
COND. 2: 167-7864-2
COND. 3: 167-7864-3
$^{\Delta}$No electrical function.

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

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 Number	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

• **Note:** For reference, part numbers 167-2896 and 167-2669 are known as "Type L" cable and " Type C" cable, respectively. • If UV resistance or higher temperature rating is required, wire part number 178-6053 can be used. It is dimensionally equivalent to 167-2669, but with PFA insulation and jacket. Kovar is a registered trademark of the Carpenter Technology Corporation.

The 1407 Series is a ruggedized 7-pin, bayonet coupled connector family. The 1407 is another one of Teledyne Reynolds' connector series that has been used extensively in airborne Traveling Wave Tube (TWT) and TWT Amplifier (TWTA) applications.

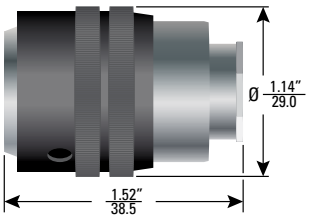
The 1407 comes in, both, shielded and non-shielded configurations. Plug kits are available for customer-fabricated cable assemblies using Teledyne Reynolds' wire.

PLUG KIT

(Dimensions shown as in/mm)

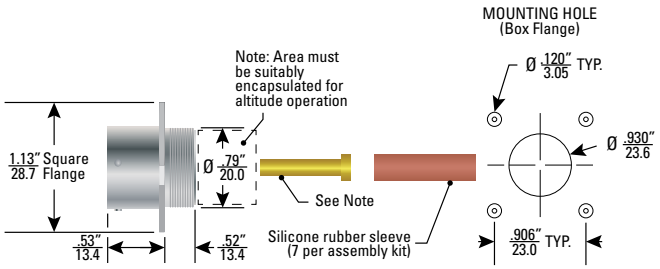
Shielded (shown)
167-9454
- Uses Wire 167-8726

Non-shielded
167-9571
- Uses Wire 167-9609



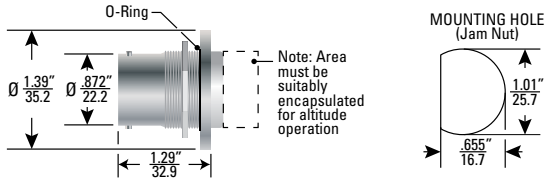
- While plug kits are available for customer-fabricated cable assemblies, Teledyne Reynolds highly recommends purchasing cable assemblies because of difficulties customers may experience in assembly and testing.
- Assembly instructions can be found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.

RECEPTACLE



Front, Box Flange Mount
178-8996

- Plastic Insulator
- **Mounting:** See optional Box Flange mounting



Sealed, Rear, Jam Nut Mount
167-8625

- Silicone Insulator
- **Mounting:** See optional Jam Nut mounting hole
- **Panel Mounting Torque:** 48 ± 4 in-lbs
- **Pressure:** Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** $1x10^{-6}$ cc/s He @1 ATM differential pressure

- Note: Contacts to be soldered to cable, inserted and bonded into insulator. Assembly instructions can be found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.

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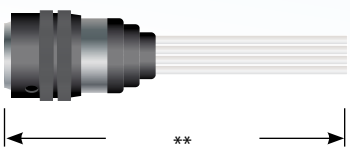
PLUG CABLE ASSEMBLIES



	SINGLE-ENDED	DOUBLE-ENDED	WIRE P/N
SHIELDED	167-9586	167-9618	167-8726
NON-SHIELDED	167-9603	167-9607	167-9609

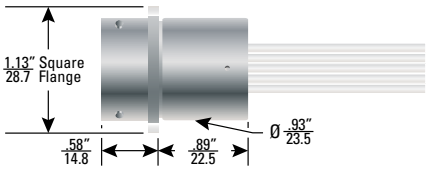
RECEPTACLE CABLE ASSEMBLIES

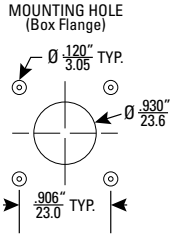
(Dimensions shown as in/mm)

Front, Box Flange Mount

178-8956 Uses Wire 167-9543

- Plastic Insulator
- **Mounting:** See optional Box Flange mounting hole

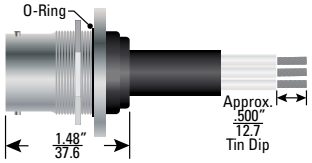


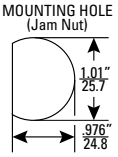


Sealed, Rear, Jam Nut Mount

167-8729 Uses Wire 167-9543

- Silicone Insulator
- **Mounting:** See optional Jam Nut mounting hole
- **Panel Mounting Torque:** 48 ± 4 in-lbs
- **Pressure:** Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-6} cc/s He @1 ATM differential pressure





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 (Pin)	Recept. Contact Material/Finish (Socket)	Wire Type	Wire Insulation	Braid Termination	Test Voltage @ 70,000 ft (kVDC)	Test Voltage @ Sea Level (kVDC)
1407	10	70,000	-55 to 125	10	Silicone	Silicone or Plastic	Bayonet	Al/Ni	Brass/Au	BeCu/Au	Shielded or Non-shielded	FEP	Band	15	N/A

WIRE SPECIFICATIONS

Part Number	Operating Voltage (kVDC)	Conductor			Insulation		Shielding			Jacket		Impedance Ω	Attenuation dB/100 ft @ 400 MHz	Capacitance pF/ft (Nom.) @ 1 kHz
		AWG	Strands	Plating	Material	ø in./mm	AWG	Plating	ø in./mm	Material	ø in./mm			
167-8726	26	22	19/34	SPC	FEP	0.100 / 2.54	36	SPC	0.12 / 3.05	FEP	0.145 / 3.68	50	TBD	30
167-9609	30	20	19/32	TPC	•	•	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

†Current Rating value depending on the wire that is selected. Current rating is per pin for multi-pin connectors. Based on your specific application, additional derating may be required.
**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 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.**

C 730 SERIES | 10 kVDC
C 737 SERIES | 15 kVDC
C 720 SERIES | 20 kVDC
C 727 SERIES | 25 kVDC

70,000 FT

-55° TO 95°C

C 735 SERIES | 30 kVDC
C 740 SERIES | 40 kVDC
C 750 SERIES | 50 kVDC

C SERIES

In 1997, Teledyne Reynolds, Inc. acquired the RLA series and other connector product lines from Rowe Industries, Inc. The RLA series has been renamed C series.

C series high voltage lead assemblies and receptacles are widely used in CRT displays, ECM equipment, power supplies, Radar and almost any application where high voltage components need to be interconnected. The plug end is molded onto a desired length of silicone cable and can be ordered single-ended, double-ended or with shielding.

RECEPTACLES

(Dimensions shown as in/mm)

Front Mount

C 730 • 10 kVDC
LGH 1/2I
2RC1505
• **Mounting:** Solder Flange

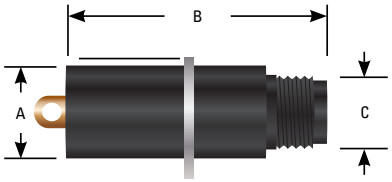
Sealed, Front Mount

C 737 • 15 kVDC
LGH 1/2LI
2RC1515

C 735 • 30 kVDC
LGH 2I
2RC1545

C 740 • 40 kVDC
LGH 3I
178-6090

C 750 • 50 kVDC
LGH 4I
2RC1565



(• = Same value as above)

SERIES	"A"	"B"	"C"
C 730	Ø.380 / 9.65	.620 / 15.7	Ø.570 / 14.4
C 737	•	1.00 / 25.4	Ø.562 / 14.3
C 735	Ø.880 / 22.3	.620 / 15.7	Ø1.12 / 28.4
C 740	Ø.750 / 19.0	1.94 / 49.2	
C 750	Ø1.00 / 25.4	2.12 / 53.8	

• **Mounting:** Solder Flange
• **Max. Leak Rate:** 1x10^{-8}cc/s He @1 ATM differential pressure

In-Line

C 730 • 10 kVDC
LGH 1/2I
3RC1505

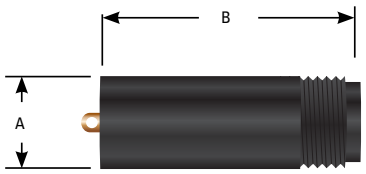
C 737 • 15 kVDC
LGH 1/2LI
13RC1515

C 720 • 20 kVDC
LGH LI
3RC1525

C 727 • 25 kVDC
LGH 1LI
RC1535

C 740 • 40 kVDC
LGH 3I
RC1545

C 750 • 50 kVDC
LGH 4I
10RC1565



(• = Same value as above)

SERIES	"A"	"B"
C 730	Ø.380 / 9.60	.620 / 15.7
C 737	•	1.00 / 25.4
C 720	Ø.500 / 12.7	•
C 727	Ø.750 / 19.0	1.81 / 45.9
C 740	•	1.94 / 49.2
C 750	Ø1.00 / 25.4	2.12 / 53.8

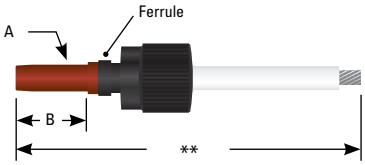
CABLE ASSEMBLIES

Positive Stop (ferrule)
Single-Ended

C 730 • 10 kVDC
LGH 1/2I
7RC1500

C 737 • 15 kVDC
LGH 1/2LI
7RC1510

C 720 • 20 kVDC
LGH LI
21RC1520

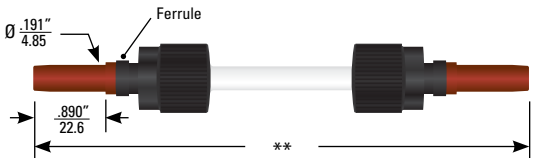


(• = Same value as above)

SERIES	"A"	"B"	WIRE P/N
C 730	Ø.186 / 4.70	.530 / 13.4	178-9863
C 737	Ø.191 / 4.85	.890 / 22.6	178-7200
C 720	Ø.287 / 7.20	•	R790-3516-6

Double-Ended

C 737 • 15 kVDC
LGH 1/2LI
178-7319
• Uses Wire 178-7200



****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 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. Nomex® is a registered trademark of DuPont.

Rev. 00-082017

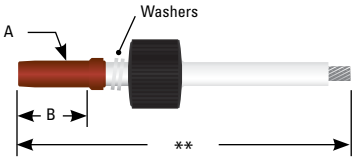
Approved for Public Release: MP/039/17

CABLE ASSEMBLIES

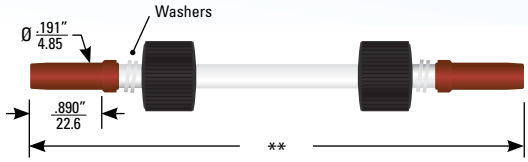
(Dimensions shown as in/mm)

Non-Positive Stop (washers)

Single-Ended



Double-Ended



SERIES	VOLTAGE RATING (kVDC)	LGH™ TYPE	SINGLE-ENDED	DOUBLE-ENDED	"A"	"B"	WIRE P/N
C 730	10	LGH 1/2I	RC1500	N/A	Ø.186 / 4.70	.530 / 13.4	R790-3516-6
C 737	15	LGH 1/2LI	RC1510	N/A	Ø.191 / 4.85	.890 / 22.6	•
C 720	20	LGH LI	RC1520	R1520	Ø.287 / 7.20	•	•
C 727	25	LGH 1LI	RC1530	R1530	•	1.69 / 42.9	178-6147
C 735	30	LGH 2I	RC1540	R1540	•	1.43 / 36.3	•
C 740	40	LGH 3I	RC1550	3R1550	•	1.83 / 45.7	•
C 750	50	LGH 4I	RC1560	3R1560	Ø.435 / 11.0	2.00 / 50.8	178-6181

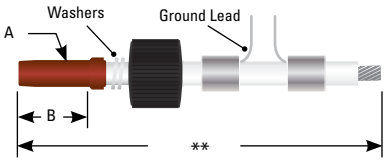
Single-Ended, Shielded

C 730 • 10 kVDC
LGH 1/2I
2RC1500

C 720 • 20 kVDC
LGH LI
178-6094

C 727 • 25 kVDC
LGH 1LI
2RC1530

C 750 • 50 kVDC
LGH 4I
2RC1560



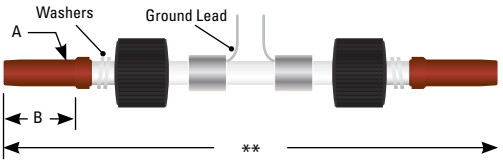
Double-Ended, Shielded

C 730 • 10 kVDC
LGH 1/2I
3R1500

C 737 • 15 kVDC
LGH 1/2LI
2RC1510

C 727 • 25 kVDC
LGH 1LI
2R1530

C 750 • 50 kVDC
LGH 4I
2R1560



SERIES	"A"	"B"	WIRE P/N
C 730	Ø.186 / 4.70	.530 / 13.4	R790-3516-2
C 720	Ø.287 / 7.0	.880 / 22.6	•
C 727	Ø.287 / 7.2	1.69 / 42.9	178-6147
C 750	Ø.435 / 11.0	2.00 / 50.8	178-6180

SERIES	"A"	"B"	WIRE P/N
C 730	Ø.186 / 4.70	.530 / 13.4	178-7200
C 737	Ø.191 / 4.85	.890 / 22.6	178-6195-9
C 727	Ø.287 /7.20	1.69 / 42.9	178-6147
C 750	Ø.435 / 11.0	2.00 / 50.8	178-6180

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
C 730	10	70,000	-55 to 95	13	Plastic	Silicone	Threaded	Plastic	BeCu/Au with CRES hood	Brass/Tin	Non-Shielded and Shielded	Silicone	N/A	15	N/A
C 737	15	•	•	•	•	•	•	•	•	•	•	•	•	18	•
C 720	20	•	•	•	•	•	•	•	•	•	•	•	•	25	•
C 727	20	•	•	•	•	•	•	•	•	•	•	•	•	35	•
C 735	30	•	•	•	•	•	•	•	•	•	•	•	•	45	•
C 740	40	•	•	•	•	•	•	•	•	•	Non-Shielded	•	•	50	•
C 750	50	•	•	•	•	•	•	•	•	•	Non-Shielded & Shielded	•	•	60	•

WIRE SPECIFICATIONS

Part Number	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			
178-7200	20	16	41/32	SPC	Silicone	0.165 / 4.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
178-6195-9	25	•	26/30	TPC	•	0.266 / 6.76	•	•	•	•	•	•	•	•
178-6147	45	16	19/29	SPC	•	0.300 / 7.62	•	•	•	•	•	•	•	•
178-6181	60	14	19/27	TPC	•	0.390 / 9.91	•	•	•	•	•	•	•	•
178-6180	•	•	•	•	•	•	TPC	TPC	0.430 / 10.9	NOMEX®	0.475 / 12.07	•	•	•

730/830 SERIES	10 kVDC	70,000 FT	-55° TO 125°C
737 SERIES	15 kVDC		
720 SERIES	20 kVDC		
727 SERIES	25 kVDC		

These "7" Series high reliability assemblies, which are intermateable with various LGH™ interfaces, are rated from 10 to 25 kVDC and will operate at altitudes up to 70,000 ft over a temperature range of -55° to 125°C. In comparison to the C Series, this series has improved temperature range capability at altitude operation due to the incorporation of annular sealing rings on the plug insulator.

7 Series plugs are offered in kit form when customers find it necessary to fabricate cable assemblies themselves. Customers should use the Teledyne Reynolds' recommended silicone rubber or silicone coated FEP wire part number that is listed for each plug kit. Fluorosilicone rubber insulators are available for applications where Coolanol® or other fluids that cause silicone rubber to swell may exist.

Plastic bodies are used in the 7 Series plug design to captivate the coupling nut and prevent tearing of silicone insulators from overtorque during mating.

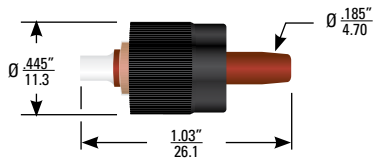
This family of connectors have been widely used Electronic Countermeasure (ECM) Systems • TWT connections • Lasers • Airborne high voltage power supplies

• While plug kits are available for customer-fabricated cable assemblies, Teledyne Reynolds highly recommends purchasing cable assemblies because of difficulties customers may experience in assembly & testing.
• Assembly instructions can be found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.

PLUG KITS

(Dimensions shown as in/mm)

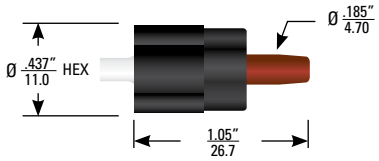
730 Series
10 kVDC
LGH 1/2I
• Plastic Coupling Nut



(• = Same value as above)

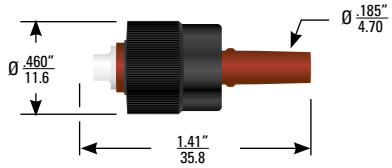
P/N	INSULATOR MATERIAL	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-9151	Silicone	Ø.080 / 2.03	FEP	167-9543
167-9274	Fluorosilicone	•	•	•
167-9219	Silicone	Ø.150 / 3.81	Silicone	167-9193

830 Series
10 kVDC
LGH 1/2I
• Metal Coupling Nut



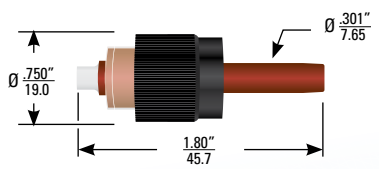
P/N	INSULATOR MATERIAL	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-8810	Silicone	Ø.080 / 2.03	FEP	167-9543
167-8782	Fluorosilicone	•	•	•

737 Series
15 kVDC
LGH 1/2LI
• Plastic Coupling Nut



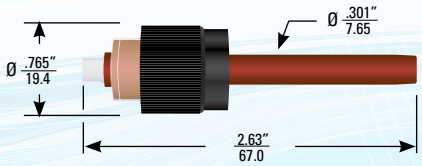
P/N	INSULATOR MATERIAL	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-8816	Silicone	Ø.080 / 2.03	FEP	167-9543
167-9391	•	Ø.150 / 3.81	Silicone	167-9193

720 Series
20 kVDC
LGH LI
• Plastic Coupling Nut



P/N	INSULATOR MATERIAL	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
178-6152	Fluorosilicone	Ø.100 / 2.54	FEP	167-7628
178-6142	Silicone	Ø.110 / 2.79	Silicone Coated FEP	178-8781
167-9296	•	Ø.150 / 3.81	FEP	167-9610
167-9163	•	Ø.180 / 4.57	Silicone	167-9169
167-9149	•	Ø.280 / 7.11	•	167-9180

727 Series
25 kVDC
LGH 1LI
• Plastic Coupling Nut



P/N	INSULATOR MATERIAL	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-9449	Silicone	Ø.180 / 4.57	FEP	167-9611
167-9330	•	Ø.280 / 7.11	Silicone	167-9180

****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 for the most up to date product information. • Contact Teledyne Reynolds' Engineering to discuss custom designs. • LGH is a trademark of Tyco Amp, Inc. and Coolanol is a registered trademark of Exxon Mobil Corporation. **WARNING:** Connectors should **NEVER** be handled mated or unmated when voltage is applied.

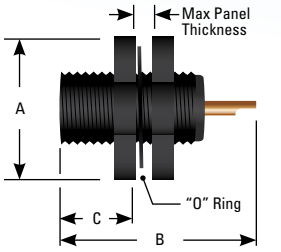
Rev. 00-082017

Approved for Public Release: MP/039/17

RECEPTACLES

(Dimensions shown as in/mm)

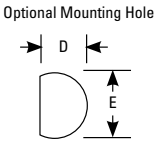
Sealed, Front Mount



730/830 • 10 kVDC
LGH 1/2I
167-9158 - Silicone Seals
167-9275 - Fluorosilicone Seals

Max. Leak Rate: 1x10^{-6} cc/s He @1ATM differential pressure
- **Panel Mounting Torque:** 5 to 6 in-lbs

720 • 20 kVDC
LGH LI
167-9157 - Silicone Seals
167-9263 - Fluorosilicone Seals



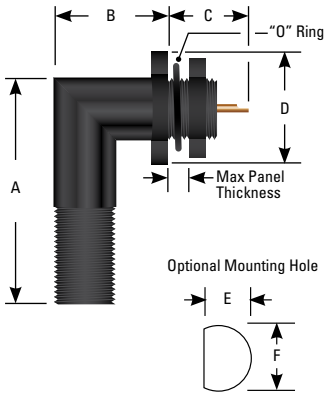
- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-6} cc/s He @1 ATM differential pressure
- **Panel Mounting Torque:** 23 to 28 in-lbs
- **Mounting:** See optional "D" hole

SERIES	"A"	"B"	"C"	MAX PANEL THICKNESS
730/830	.625 / 15.9	.850 / 21.6	.375 / 9.53	.188 / 4.78
720	.960 / 24.4	1.195 / 30.4	.575 / 14.6	.250 / 6.35

Optional Mounting Hole

SERIES	"D"	"E"
730/830	.295 / 7.49	.323 / 8.20
720	.480 / 12.2	.508 / 12.9

Right Angle, Sealed, Front Mount



730/830 • 10 kVDC
LGH 1/2I
167-9228 - Silicone Seals
167-9294 - Fluorosilicone Seals

- **Panel Mounting Torque:** 5 to 6 in-lbs

720 • 20 kVDC
LGH LI
167-9227 - Silicone Seals
167-9293 - Fluorosilicone Seals

- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-6} cc/s He @1 ATM differential pressure
- **Panel Mounting Torque:** 23 to 28 in-lbs
- **Mounting:** See optional "D" hole

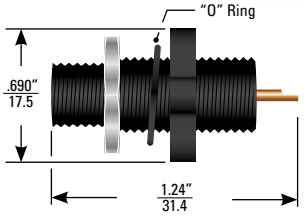
SERIES	"A"	"B"	"C"	"D"	MAX PANEL THICKNESS
730/830	.846 / 21.5	.475 / 12.1	.490 / 12.5	.625 / 15.9	.188 / 4.78
720	1.36 / 34.5	.630 / 17.4	.635 / 16.1	.960 / 24.4	.250 / 6.35

Optional Mounting Hole

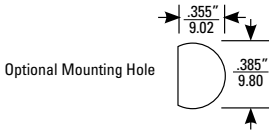
SERIES	"E"	"F"
730/830	.295 / 7.49	.323 / 8.20
720	.480 / 12.2	.508 / 12.9

Sealed, Front or Rear Mount

737 • 15 kVDC
LGH 1/2 LI
167-8721

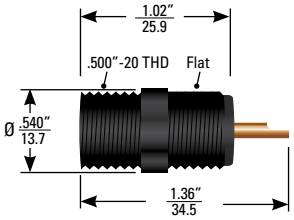


- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-6} cc/s He @1ATM differential pressure
- **Panel Mounting Torque:** 5 to 6 in-lbs
- **Mounting:** See optional "D" hole

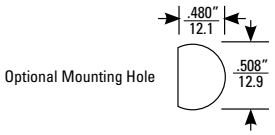


In-Line, Non-Sealed

720 • 20 kVDC
LGH LI
167-8603 - Silicone Seal

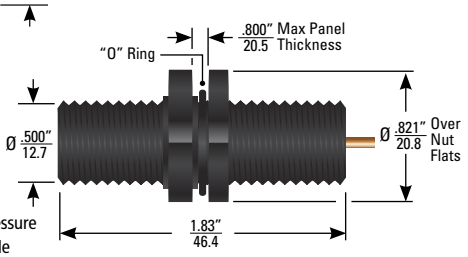


- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-6} cc/s He @1ATM differential pressure
- **Mounting:** See optional "D" hole

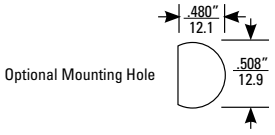


Sealed, Front Mount

727 • 25 kVDC
LGH 1LI
167-9336 - Silicone Seal
167-9337 - Fluorosilicone Seal



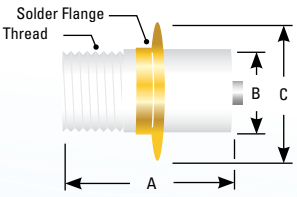
- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-6} cc/s He @1ATM differential pressure
- **Mounting:** See optional "D" hole



Ceramic-to-Metal, Brazed Hermetic

730/830 • 10 kVDC
LGH 1/2I
167-8626

720 • 20 kVDC
LGH LI
167-9803



- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-8} cc/s He @1 ATM differential pressure
- **Flange material:** Iron nickel alloy with gold over copper plating
- **Mounting:** Solder flange

SERIES	THREAD	"A"	"B"	"C"
730/830	312"-32 UNEF-2A	.655 / 16.6	Ø.310 / 7.87	Ø.500 / 12.7
720	.500"-20 UNF-1A	1.03 / 26.0	Ø.498 / 12.7	Ø.812 / 20.6

730/830 SERIES	10 kVDC	70,000 FT	-55° TO 125°C
737 SERIES	15 kVDC		
720 SERIES	20 kVDC		
727 SERIES	25 kVDC		

CABLE ASSEMBLIES

730

LGH 1/2I

Single-Ended

Double-Ended

(• = Same value as above)

SINGLE-ENDED	DOUBLE-ENDED	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-9876	167-9872	.080 / 2.03	FEP	167-9543
167-9879*	167-9875*	.150 / 38.1	Silicone	167-9193
167-9213	167-9210	•	•	•

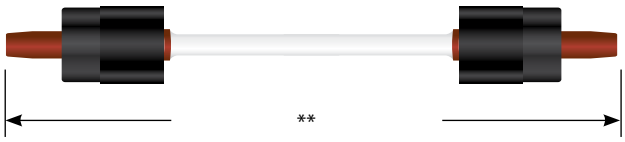
*Fluorosilicone rubber insulators.

830

LGH 1/2I

Single-Ended

Double-Ended



SINGLE-ENDED	DOUBLE-ENDED	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-8812	167-8813	.080 / 2.03	FEP	167-9543
167-8854*	167-8855*	.150 / 38.1	Silicone	167-9193
167-8814	167-8815	•	•	•

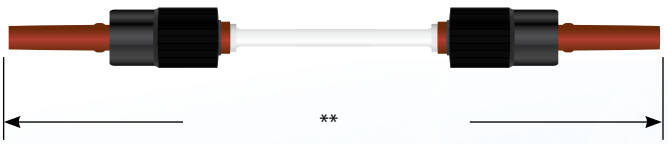
*Fluorosilicone rubber insulators.

737

LGH 1/2LI

Single-Ended

Double-Ended



SINGLE-ENDED	DOUBLE-ENDED	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-8818	167-8817	.080 / 2.03	FEP	167-9543
167-9917	167-9916	.150 / 38.1	SIlicone	167-9193

****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 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.

Rev. 00-082017

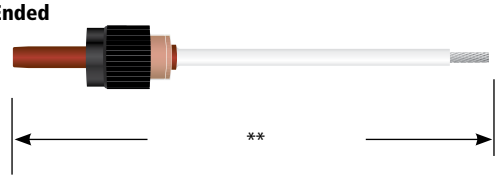
Approved for Public Release: MP/039/17

CABLE ASSEMBLIES

720

LGH LI

Single-Ended



Double-Ended

(• = Same value as above)

SINGLE-ENDED	DOUBLE-ENDED	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
178-6154*	178-6153*	.100 / 2.54	FEP	167-7628
178-6144	178-6143	.110 / 2.79	Silicone Coated FEP	178-8781
167-9957	167-8798	.150 / 38.1	FEP	167-9610
167-9164	167-9201	.180 / 4.57	Silicone	167-9169
167-9150	167-9203	.280 / 7.11	•	167-9180

*Fluorosilicone rubber insulators.

727

LGH 1LI

Single-Ended

Double-Ended

SINGLE-ENDED	DOUBLE-ENDED	WIRE DIA. (in./mm)	WIRE TYPE	WIRE P/N
167-8805	167-8804	.180 / 4.57	FEP	167-9611
167-9332	167-9333	.280 / 7.11	SIlicone	167-9180

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
730	10	70,000	-55 to 125	13	Plastic or Ceramic	Silicone or Fluorosilicone	Threaded	Plastic	BeCu/Au with CRES hood	Brass/Au or Kovar™	Non-Shielded	FEP or Silicone	N/A	15	N/A
830	•	•	•	•	Plastic	•	•	Al/Anodized	•	Brass/Au	•	•	•	•	•
737	15	•	•	•	•	•	•	Plastic	•	•	•	•	•	18	•
720	20	•	•	•	Plastic or Ceramic	•	•	•	•	Brass/Au or Kovar™	•	•	•	25	•
727	25	•	•	•	Plastic	•	•	•	•	Brass/Au	•	•	•	35	•

WIRE SPECIFICATIONS

Part Number	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			
167-9193	17	18	19/30	SPC	Silicone	0.150 / 3.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
167-9169	20	16	19/29	•	•	0.180 / 4.57	•	•	•	•	•	•	•	•
167-9180	•	•	19/30	•	•	0.280 / 7.11	•	•	•	•	•	•	•	•
167-9543	22	20	19/32	TPC	FEP	0.080 / 2.03	•	•	•	•	•	•	•	•
167-8781	30	•	•	SPC	Silicone Coated FEP	0.110 / 2.79	•	•	•	•	•	•	•	•
167-9611	•	16	19/29	•	FEP	0.180 / 4.57	•	•	•	•	•	•	•	•
167-7628	•	20	19/32	•	•	0.100 / 2.54	•	•	•	•	•	•	•	•
167-9610	37	•	•	TPC	•	0.150 / 3.81	•	•	•	•	•	•	•	•

Kovar is a registered trademark of the Carpenter Technology Corporation.

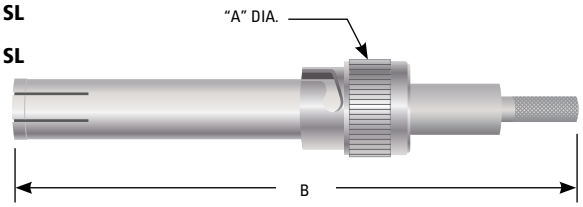
531 SL SERIES	10 kVDC	SEA LEVEL	-40° TO 85°C
531 SERIES	15 kVDC	70,000 FT	
521 SL SERIES	20 kVDC	SEA LEVEL	
521 SERIES	25 kVDC	70,000 FT	

A series of shielded high voltage connectors, kits and cable assemblies designed to minimize the risk of electrical shock to personnel through the use of recessed contacts. Both the panel and cable connectors have recessed contacts and will stand off the rated voltage in the unmated condition.
Note: Voltage ratings apply in the mated condition only. Unmated 521 rated voltage is 20 kVDC and 531 is 10 kVDC.

PLUG KITS

(Dimensions shown as in/mm)

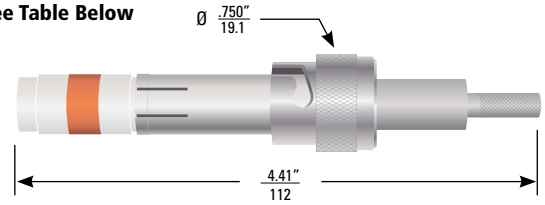
531 SL
531
521 SL



SERIES	P/N	"A"	"B"	WIRE P/N
531 SL	167-3554	Ø.625 / 15.9	2.72 / 69.0	167-2669
531	167-4535	•	•	•
521 SL	167-3516	Ø.750 / 19.1	4.41 / 112	RG213/U
521 *SL*	167-3516-1	•	•	RG214/U

(• = Same value as above)

521: See Table Below



521 P/N	WIRE P/N
167-4534	RG213/U
167-4534-1	RG214/U
167-4534-C	167-2669

- 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.
- Assembly instructions found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.

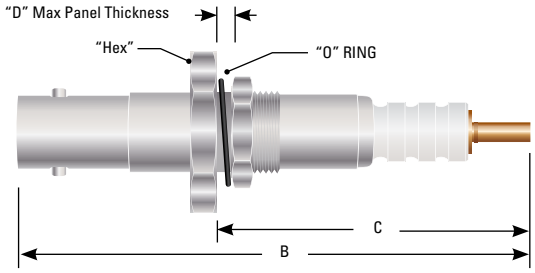
RECEPTACLES

Sealed, Front Mount

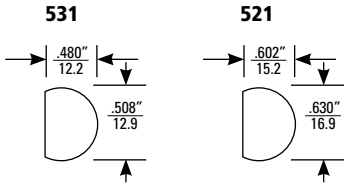
531 167-3555
- **Mounting:** Allow clearance for 1/2-28 UNEF thread
- **Panel Mounting Torque:** 42 to 48 in-lbs

521 167-3517
- **Mounting:** Allow clearance for 5/8-24 UNEF thread
- **Panel Mounting Torque:** 90 to 95 in-lbs

- **Pressure:** Sealed for 1 ATM differential pressure
- **Max Leakage:** 1x10^{-6} cc/s He @ 1 ATM differential



OPTIONAL MOUNTING HOLES



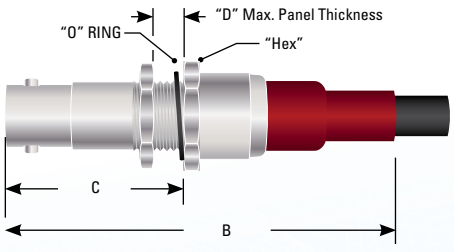
SERIES	P/N	"HEX"	"B"	"C"	"D"
531	167-3555	.750 / 19.1	2.70 / 68.6	1.62 / 41.2	.312 / 7.92
521	167-3517	.930 / 23.6	3.94 / 100	2.56 / 65.0	.250 / 6.35

Sealed, Rear Mount, Cable Assembly Kit

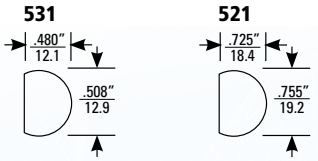
531: 167-9096 Uses Wire 167-2669
- **Mounting:** Allow clearance for 1/2"-28 UNEF thread
- **Panel Mounting Torque:** 42 to 48 in-lbs

521 167-9100 Uses Wire RG213/U
- **Mounting:** Allow clearance for 5/8"-24 UNEF thread
- **Panel Mounting Torque:** 90 to 95 in-lbs

- **Pressure:** Sealed for 1 ATM differential pressure
- **Max Leakage:** 1x10^{-6} cc/s He @ 1 ATM differential



OPTIONAL MOUNTING HOLES



SERIES	P/N	"HEX"	"B"	"C"	"D"
531	167-9096	.750 / 19.1	2.88 / 73.0	1.270 / 32.3	.312 / 7.92
521	167-9100	1.06 / 27.0	4.00 / 102	2.08 / 52.8	.437 / 11.1

****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 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.

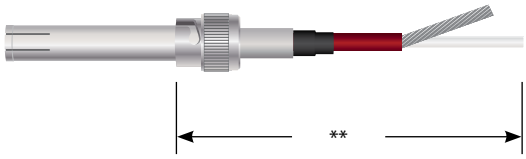
Rev. 00-082017

Approved for Public Release: MP/039/17

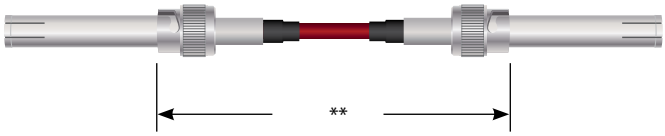
531 SL SERIES	10 kVDC	SEA LEVEL	-40° TO 85°C
531 SERIES	15 kVDC	70,000 FT	
521 SL SERIES	20 kVDC	SEA LEVEL	
521 SERIES	25 kVDC	70,000 FT	

531 SL AND 531 CABLE ASSEMBLIES

Single-Ended, Shielded, Pigtail
531 SL: 167-4451
531: 167-9003
• Uses Wire 167-2669

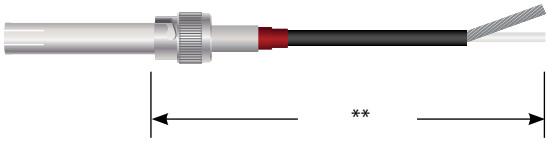


Double-Ended, Shielded
531 SL: 167-3648
531: 167-4561
• Uses Wire 167-2669

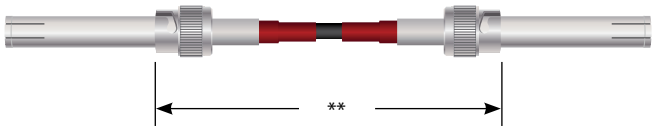


521 SL CABLE ASSEMBLIES

Single-Ended, Shielded, Pigtail
167-4450-1
• Uses Wire RG213/U



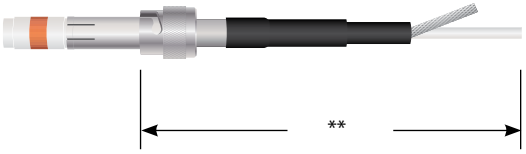
Double-Ended, Shielded
167-3638-1
• Uses Wire RG213/U



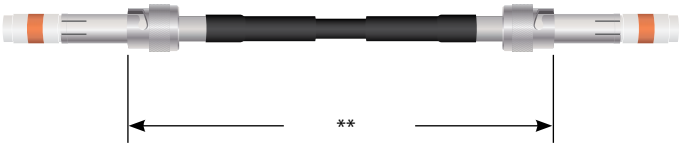
SINGLE-ENDED	DOUBLE-ENDED	WIRE P/N
167-4450-4	167-3638-4	RG214/U

521 CABLE ASSEMBLIES

Single-Ended, Shielded, Pigtail
167-4596-1
• Uses Wire RG213/U



Double-Ended, Shielded
167-4569-1
• Uses Wire RG213/U



SINGLE-ENDED	DOUBLE-ENDED	WIRE P/N
167-4596-4	167-4569-4	RG214/U
178-6404*	178-9879*	167-2669

*Not shown

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
531 SL	10	Sea Level	-40 to 85	10	Plastic	Plastic	Bayonet	Brass/Ni	BeCu/Au	Brass/Au	Shielded	PE	Crimp	N/A	13
531	15	70,000	•	•	•	•	•	•	•	•	•	•	•	31	N/A
521 SL	20	Sea Level	•	20.4	•	•	•	•	•	•	•	•	•	N/A	28
521	25	70,000	•	•	•	•	•	•	•	•	•	•	•	41	N/A

WIRE SPECIFICATIONS

Part Number	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			
167-2669	20	16	19/29	TPC	Silicone	.118 / 3.00	36	TPC	.150 / 3.81	PE	.195 / 4.95	31	16	48

PeeWee SERIES

PeeWee is one of a family of subminiature, high-voltage connectors for use in high voltage applications where dense electronic packaging is required. The PeeWee connector uses a unique method of sealing high voltage at reduced atmospheric pressure, which allows the connector to be rated at 12 kVDC at 70,000 ft with a temperature range of -55° to 125°C.

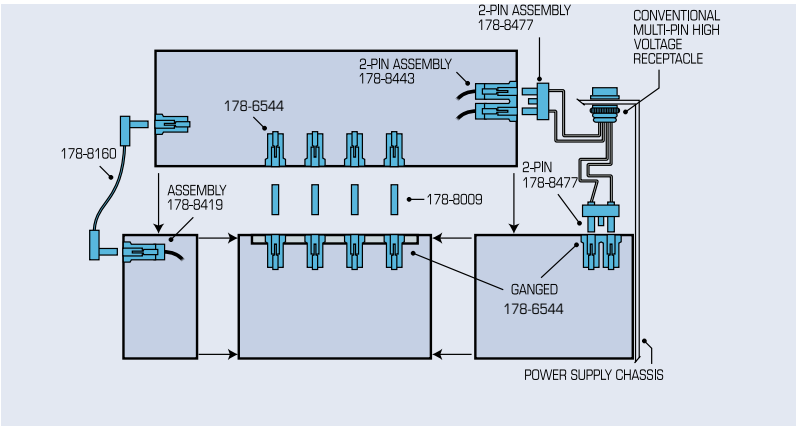
Information on the Space Qualified (SQ) PeeWee SQ series can be found in Teledyne Reynolds' Space Qualified Products catalog.

MODULARIZATION

By using PeeWee connectors, it is possible to package or re-package a high voltage power supply into multiple modules which can be easily and reliably mated and un-mated with one another.

The packaging technique permits the pre-testing of individual modules as they are being manufactured and the ability to replace modules or perform routine maintenance in the field when necessary.

Typical cross-section of a modularized power supply utilizing PeeWee connectors and cable assemblies.



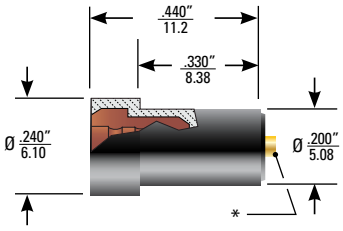
RECEPTACLES

(Dimensions shown as in/mm)

Non-Sealed, Front Mount†

178-6544 (Replaces 178-7937)

- Recommend bonding into epoxy G-10 plate .080" or .120" thick
- **Mounting:** .243" (6.17 mm) diameter hole



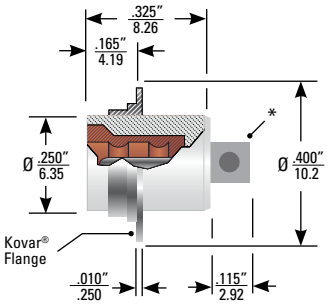
Ceramic-to-Metal, Brazed, Hermetic†

467-7022

- **Mounting:** Weld Flange

467-7024

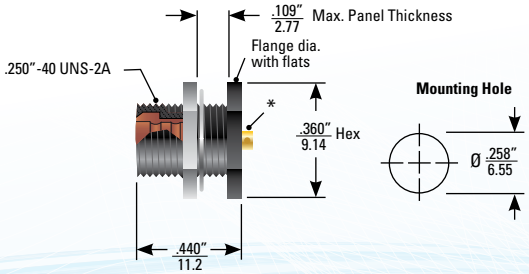
- **Mounting:** Solder Flange
- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** $1x10^{-8}$ cc/s He @1 ATM differential pressure



Threaded, Non-Sealed, Rear Mount††

178-8621-1

- **Panel Mounting Torque:** 5 to 6 in-lbs
- **Mounting:** .258" (6.55 mm) diameter hole



† Mates with all push-pull coupling, single-pin, PeeWee series plug or receptacle assemblies.
†† Mates with all threaded coupling, single-pin, PeeWee series plug or receptacle assemblies.

*Contact pot will accomodate 24 AWG wire. Do not exceed 400°F when soldering. Use SN 60 solder.

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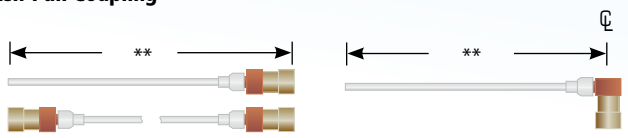
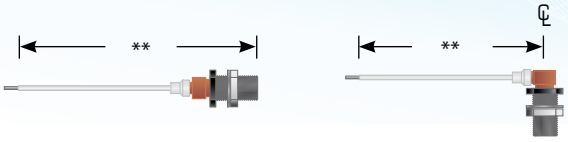
RECEPTACLE CABLE ASSEMBLIES

Push-Pull Coupling†



	SINGLE-ENDED	DOUBLE-ENDED	WIRE TYPE	WIRE P/N
STRAIGHT	178-8110	178-8180	Etched FEP	178-8111
STRAIGHT	178-8419	178-8420	Silicone Coated FEP	178-8066
RT. ANGLE	178-8251	N/A	Etched FEP	178-8111
RT. ANGLE	178-8422	•	Silicone Coated FEP	178-8066

Threaded Coupling††



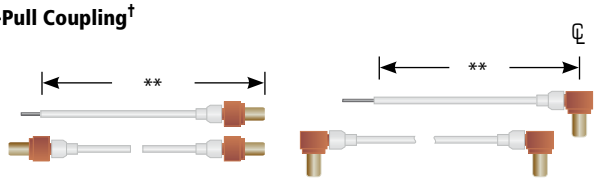
(• = Same value as above)

	SINGLE-ENDED	WIRE TYPE	WIRE P/N
STRAIGHT	178-9499	Etched FEP	178-8111
STRAIGHT	178-9500	Silicone Coated FEP	178-8066
STRAIGHT	178-9502	Silicone Coated FEP, NOMEX® Jacket	178-5789
RT. ANGLE	178-9510	•	•

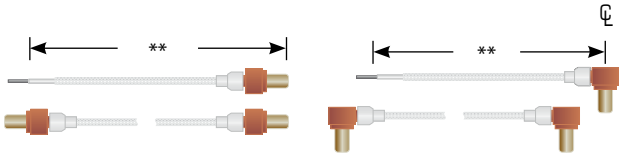
† Mates with all non-threaded, single-pin, PeeWee series plug assemblies.
†† Mates with all threaded, single-pin, PeeWee series plug assemblies.

PLUG CABLE ASSEMBLIES

Push-Pull Coupling†

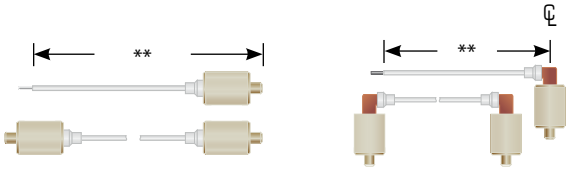


	SINGLE-ENDED	DOUBLE-ENDED	WIRE TYPE	WIRE P/N
STRAIGHT	178-8166	178-8169	Etched FEP	178-8111
STRAIGHT	178-8425	178-8426	Silicone Coated FEP	178-8066
RT. ANGLE	178-8172	178-8160	Etched FEP	178-8111
RT. ANGLE	178-8423	178-8424	Silicone Coated FEP	178-8066



	SINGLE ENDED, NOMEX® JACKET	DOUBLE-ENDED, NOMEX® JACKET	WIRE TYPE	WIRE P/N
STRAIGHT	178-8174	178-8177	Etched FEP, NOMEX® Jacket	178-8118
STRAIGHT	178-8427	178-8428	Silicone Coated FEP, NOMEX® Jacket	178-5789
RT. ANGLE	178-8167	178-8163	Etched FEP, NOMEX® Jacket	178-8118
RT. ANGLE	178-8429	178-8430	Silicone Coated FEP, NOMEX® Jacket	178-5789

Threaded Coupling††



	SINGLE-ENDED	DOUBLE-ENDED	WIRE TYPE	WIRE P/N
STRAIGHT	178-8398	178-8402	Etched FEP	178-8118
STRAIGHT	178-8399	178-8403	Silicone Coated FEP	178-8066
RT. ANGLE	178-9345	178-9349	Etched FEP, NOMEX® Jacket	178-8118
RT. ANGLE	178-9346	178-9350	Silicone Coated FEP, NOMEX® Jacket	178-5789

† Mates with all push-pull coupling, single-pin, PeeWee series plug or receptacle assemblies.
†† Mates with all threaded coupling, single-pin, PeeWee series plug or receptacle assemblies.
Note: Exposed cable insulation on NOMEX® covered single-ended cable assemblies will be 1/2 inch less the cable length, unless otherwise specified.

PLUG AND RECEPTACLE DIMENSIONS CAN BE FOUND ON THE NEXT PAGE.

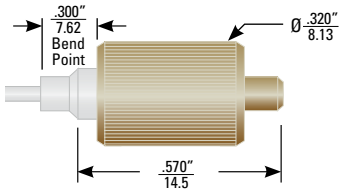
****Cable Assembly Ordering Information:** All cable assembly cable lengths are to be specified in inches only. For example, to order part number 178-6027 with a cable length of 10 feet 8 inches the cable assembly part number would be specified as 178-6027-128N.
• **Note:** Product numbers and specs subject to change without notice. • Products listed represent only a small selection of Teledyne Reynolds' products please visit www.teledynereynolds.com 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.
• Nomex® is a registered trademark of DuPont. Kovar® is a registered trademark of the Carpenter Technology Corporation.

PeeWee is one of a family of subminiature, high-voltage connectors for use in high voltage applications where dense electronic packaging is required. The PeeWee connector uses Teledyne Reynolds' patented Advanced Interface™ method of sealing high voltage at reduced atmospheric pressure, which allows the connector to be rated at 12 kVDC at 70,000 feet with a temperature range of -55° to 125°C.

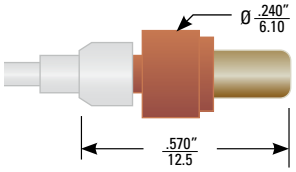
PLUG DIMENSIONS

(Dimensions shown as in/mm)

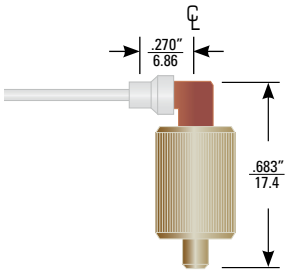
Straight Threaded



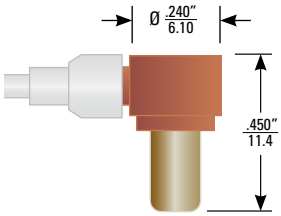
Straight Non-Threaded



Right Angle Threaded

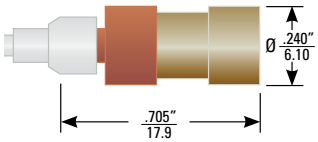


Right Angle Non-Threaded

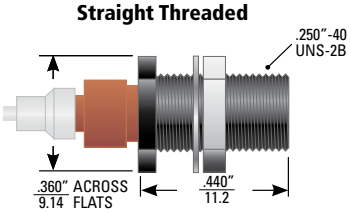


RECEPTACLE DIMENSIONS

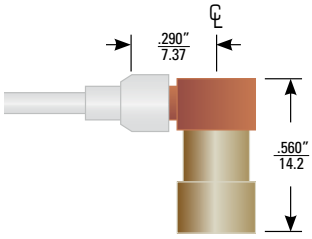
Straight Non-Threaded



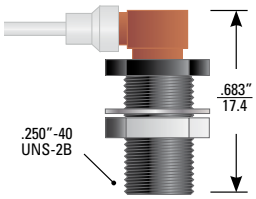
Straight Threaded



Right Angle Non-Threaded



Right Angle Threaded

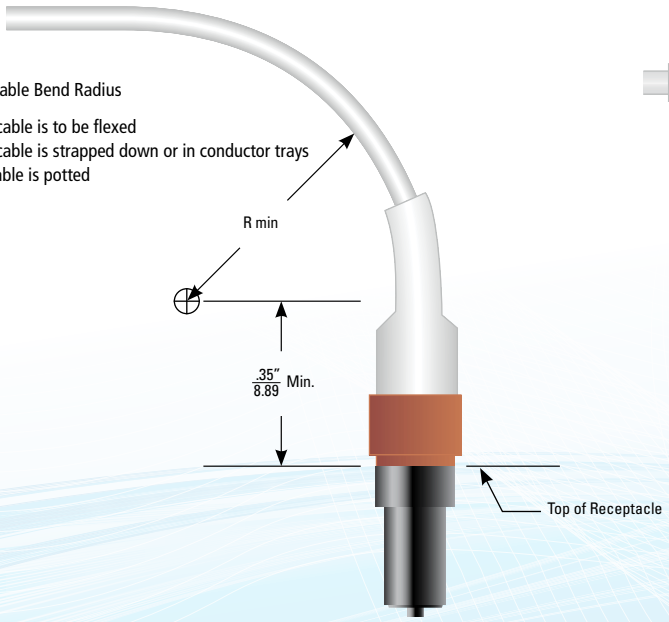


MATED HEIGHT AND BEND RADIUS

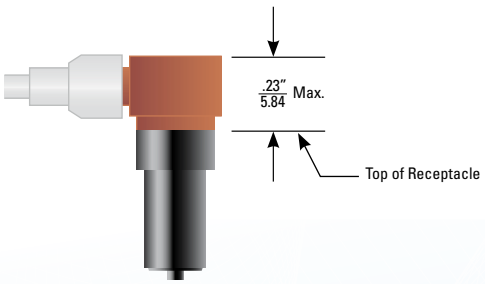
Straight Non-Threaded, Mated Height and Bend Radius

Recommended Minimum Cable Bend Radius

- 20 x cable diameter if cable is to be flexed
- 10 x cable diameter if cable is strapped down or in conductor trays
- 8 x cable diameter if cable is potted



Right-angle, Non-threaded, Mated Height



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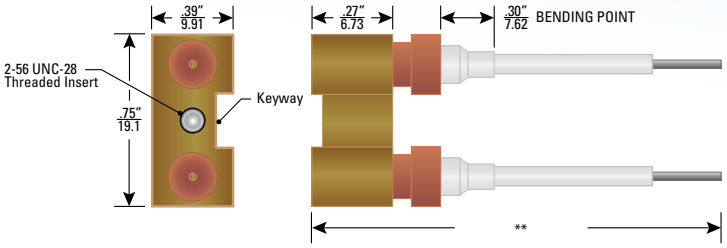
RECEPTACLE CABLE ASSEMBLIES

(Dimensions shown as in/mm)

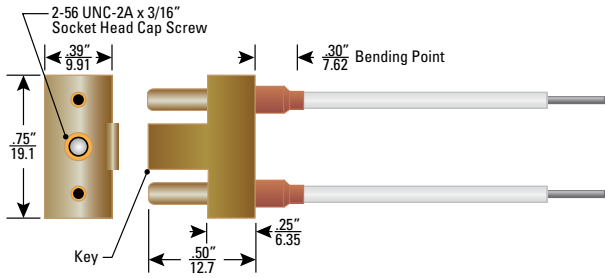
2-pin, Single-ended



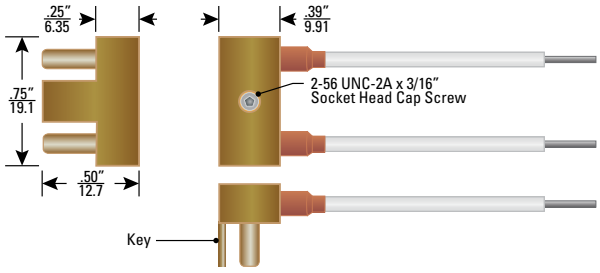
SINGLE-ENDED	WIRE TYPE	WIRE P/N
178-8433	Etched FEP	178-8111
178-8560	Silicone Coated FEP	178-8066
178-8561	Etched FEP, NOMEX® Jacket	178-8118
178-8562	Silicone Coated FEP, NOMEX® Jacket	178-5789

PLUG CABLE ASSEMBLIES

2-Pin, Single-ended



2-Pin, Single-ended, Right Angle



STRAIGHT	RIGHT ANGLE	WIRE TYPE	WIRE P/N
178-8556	178-8477	Etched FEP	178-8111
178-8557	178-8553	Silicone Coated FEP	178-8066
178-8558	178-8554	Etched FEP, NOMEX® Jacket	178-8118
178-8559	178-8555	Silicone Coated FEP, NOMEX® Jacket	178-5789

Note: Exposed cable insulation on NOMEX® covered single-ended cable assembly will be 1/2 inch less the cable length, unless otherwise specified.

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 (kVDC)	Test Voltage @ Sea Level (kVDC)
PeeWee	12	70,000	-55 to 125	5	Plastic or Ceramic	Plastic	Push-on or Threaded	Plastic	BeCu/Au with CRES hood	Brass/Au or Kovar®	Non-Shielded	FEP	N/A	18	N/A

WIRE SPECIFICATIONS

Part Number	Operating Voltage (kVDC)	Conductor			Insulation		Shielding			Jacket		Impedance Ω	Attenuation dB/100 ft @ 400 MHz	Capacitance pF/ft (Nom.) @ 1 kHz
		AWG	Strands	Plating	Material	ø in./mm	AWG	Plating	ø in./mm	Material	ø in./mm			
178-8111	18	24	19/36	SPC	Etched FEP	0.050 / 1.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
178-8118	•	•	•	•	•	•	•	•	•	Nomex®	TBD	•	•	•
178-8066	•	•	•	•	Silicone Coated FEP	0.060 / 1.52	•	•	•	N/A	N/A	•	•	•
178-5789	•	•	•	•	•	•	•	•	•	Nomex®	TBD	•	•	•

**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. Nomex® is a registered trademark of DuPont. Kovar® is a registered trademark of the Carpenter Technology Corporation.
• **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 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.**

The Hi/Mate™ Series are miniature insertable/removeable high voltage contact assemblies for use in MIL-C-38999 Series I, III and IV off-the-shelf connectors having a 12 gauge, rear release, contact retention cavity.

Hi/Mate™ expands the capability of MIL-C-38999 Series I, III and IV connectors, by adapting them to carry 13.5 kVDC from sea level to airborne applications up to 70,000 feet altitude over a temperature range of -55° to 125°C.

Hi/Mate™ contact assemblies are insertable into four standard shell sizes and eight insert arrangements in accordance with MIL-STD-1560. These contact assemblies are, in actuality, independent high voltage connectors, and do not rely upon the dielectric properties of the MIL-C-38999 insert; making the Hi/Mate™ ideally suited to be combined in inserts with fiber optic, coaxial or low voltage pins. The insert is merely a holder for the Hi/Mate™ contact and Advanced Interface Seal™.

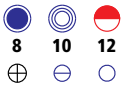
Hi/Mate™
The MIL-C-38999 compatible high voltage interface

The Advanced Interface Seal™ was patented by Teledyne Reynolds and has been highly successful in numerous connectors designed for use in the harshest of environments from sea level to Deep Space.

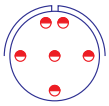
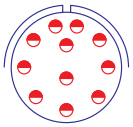
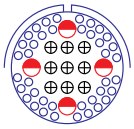
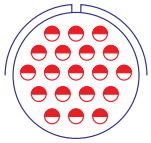
INSERT ARRANGEMENTS

Any 12 gauge cavity in the insert arrangements shown below, can be converted to a 13.5 kVDC high voltage circuit without modification to the insert, by installing a Hi/Mate™ contact assembly in the appropriate pin and socket combination. Insert arrangements are in accordance with MIL-STD-1560. 12 gauge cavities are identified in the Contact Legend.

Contact Legend

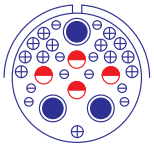
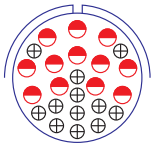
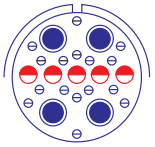


Front face of pin inserts illustrated

Insert Arrangement	17-6	21-11	23-54	25-19
Service Rating	I	I	M	I
Number of Contacts	6	11	40 9 4	19
Contact Size	12	12	22D 16 12	12

Front face of pin inserts illustrated

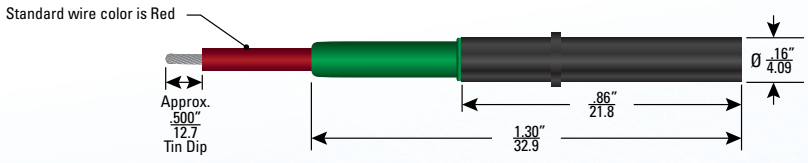
Note:
Custom inserts are available for high voltage, low voltage, fiber optic and coaxial pins, as well as combinations of these pins

Insert Arrangement	25-20	25-24	25-26
Service Rating	N	I	I
Number of Contacts	10 13 3 4	12 12	16 5 4
Contact Size	20 16 8 Twinax 12 Coax	16 12	20 12 8 Coax

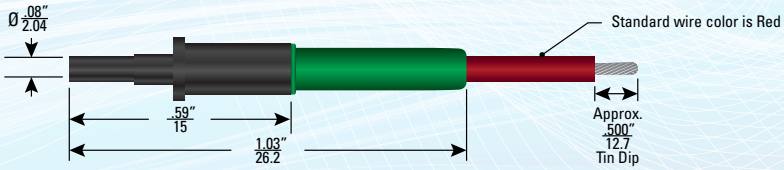
PLUG AND RECEPTACLE CONTACT ASSEMBLY DIMENSIONS

(Dimensions shown as in/mm)

Receptacle Contact Assembly



Plug Contact Assembly



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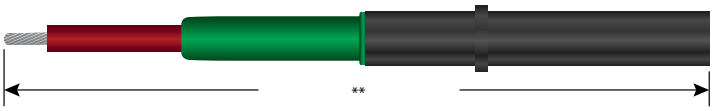
PLUG CONTACT ASSEMBLIES

Single-Ended
178-5237

Double-Ended
178-5240

RECEPTACLE CONTACT ASSEMBLIES

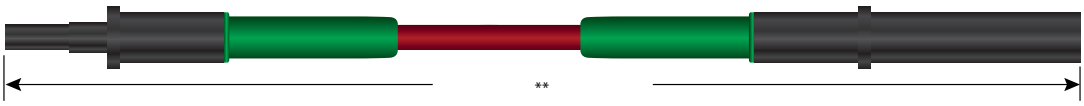
Single-Ended
178-5238



Double-Ended
178-5241

PLUG-RECEPTACLE CONTACT ASSEMBLY

Double-Ended
178-5239



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 (kVDC)	Test Voltage @ Sea Level (kVDC)
Hi/Mate™	13.5	70,000	-55 to 125	5	Plastic	Plastic	MIL-DTL-38999	MIL-DTL-38999	BeCu/Au	Brass/Au	Non-shielded	FEP	N/A	18	NA

WIRE SPECIFICATIONS

Part Number	Operating Voltage (kVDC)	Conductor			Insulation		Shielding			Jacket		Impedance Ω	Attenuation dB/100 ft @ 400 MHz	Capacitance pF/ft (Nom.) @ 1 kHz
		AWG	Strands	Plating	Material	ø in./mm	AWG	Plating	ø in./mm	Material	ø in./mm			
178-8410	18	24	19/36	SPC	Silicone Coated FEP	.058 / 1.48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**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 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.**

The Hi/Mate$_D$™ Series of high voltage insertable/removeable contact assemblies are rated at 13.5 kVDC and can be fitted into a Subminiature-D (Sub-D) 8 gauge insert cavity. The assemblies are ideal for airborne applications up to 70,000 feet altitude over a temperature range of -55° to 125°C. Hi/Mate$_D$ is fully compatible with signal lines, coaxial, fiber optic and power contacts in the same Sub-D connector. These contact assemblies are independent high voltage connectors, and do not rely upon the dielectric properties of the Sub-D insert.

Complete cable assemblies with Hi/Mate$_D$™ high voltage contact assemblies installed into Positronic® CBD/CBM Series Subminiature-D connectors, are available from Teledyne Reynolds as fully tested units.

INSERT ARRANGEMENTS

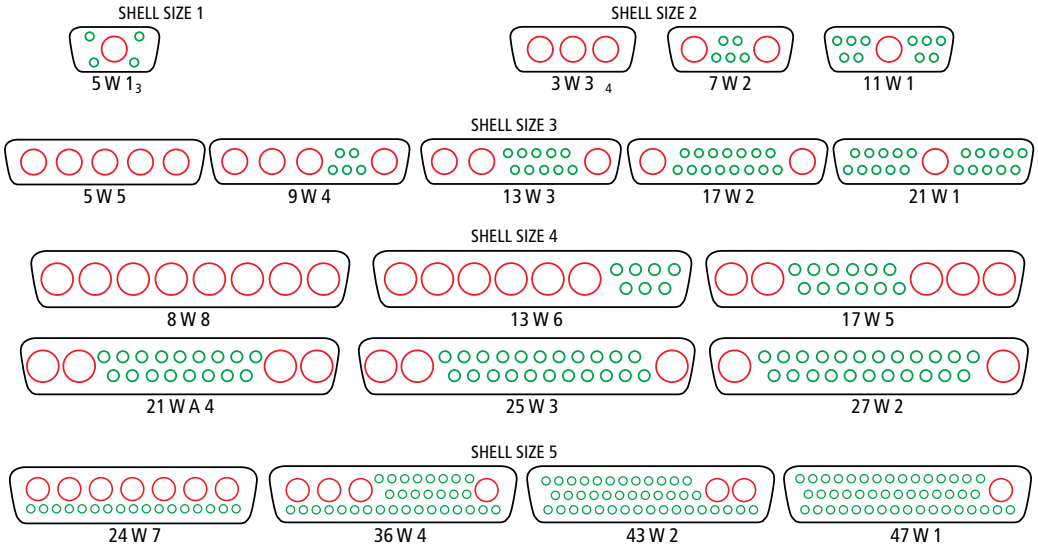
Any 8 gauge cavity in the insert arrangements shown below, can be converted to a 13.5 kVDC high voltage circuit simply by installing a Hi/Mate$_D$™ contact assembly into the appropriate male or female cavity.

Positronic® CBD/CBM series Subminiature-D Insert Arrangemets

Face view of Male - Rear view of Female

8 Gauge Cavity for Hi/Mate$_D$™ installation

Size 20 fixed contacts



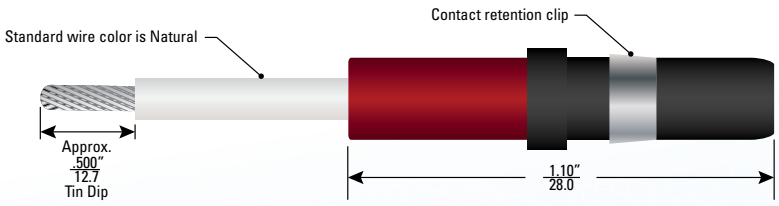
To view shell dimensions courtesy of Positronic® Industries please go to: www.connectpositronic.com

Notes:
1. Shell drawings are not to scale.
2. Care must be taken to observe Male/Female gender of both the Hi/Mate$_D$™ contact assembly and the Sub-D Shell/Insert arrangement.
3. 2WK2 connectors have 1 male and 1 female contacts. Female connector should be loaded with female contact in A2 position.
4. 3WK3 male variant contains 2 male contacts and 1 female contact. Female variant contains 2 female contacts and 1 male contact

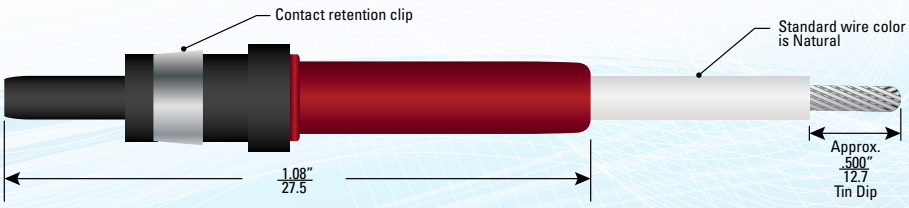
PLUG AND RECEPTACLE CONTACT ASSEMBLY DIMENSIONS

(Dimensions shown as in/mm)

Receptacle Contact Assembly



Plug Contact Assembly



Note: Receptacle assembly can only be installed into a Sub-D female insert. Plugs can only be installed into a male insert.

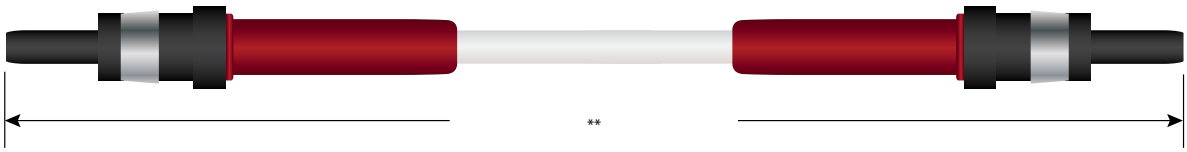
Rev. 00-082017

Approved for Public Release: MP/039/17

PLUG CONTACT ASSEMBLIES

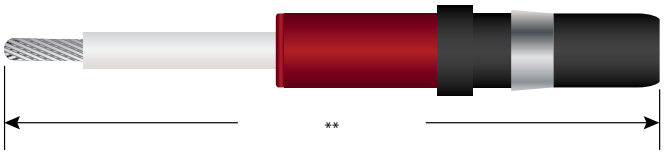
Single-Ended
178-5727

Double-Ended
178-5740

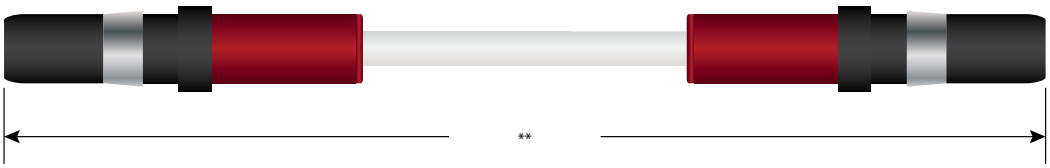


RECEPTACLE CONTACT ASSEMBLIES

Single-Ended
178-5728



Double-Ended
178-5741



PLUG-RECEPTACLE CONTACT ASSEMBLY

Double-Ended
178-5729

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 (kVDC)	Test Voltage @ Sea Level (kVDC)
Hi/Mate™	13.5	70,000	-55 to 125	5	Plastic	Plastic	D-Sub	D-Sub	BeCu/Au	Brass/Au	Non-shielded	FEP	N/A	18	NA

WIRE SPECIFICATIONS

Part Number	Operating Voltage (kVDC)	Conductor			Insulation		Shielding			Jacket		Impedance Ω	Attenuation dB/100 ft @ 400 MHz	Capacitance pF/ft (Nom.) @ 1 kHz
		AWG	Strands	Plating	Material	ø in./mm	AWG	Plating	ø in./mm	Material	ø in./mm			
178-8066	18	24	19/32	SPC	FEP	.06 / 1.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**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. • Positronic® is a trademark owned by Positronic Industries, Inc.
• **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 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.**

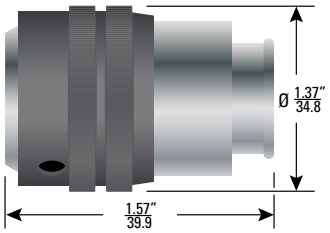
The 1804 and 1807 Series of ruggedized 4 and 7-pin, connectors have been used in applications ranging from military vehicle electric reactive armor to airborne Synthetic Aperture Radar. The 1807 has even been used on the Ion Propulsion systems that have propelled some of NASA and JAXA's most successful spacecraft into Deep Space.

Both the 1804 and 1807 use the same connector housings which come in shielded and non-shielded configurations with either threaded or bayonet coupling nuts. Plug kits are available for customer-fabricated cable assemblies using Teledyne Reynolds' specified wire.

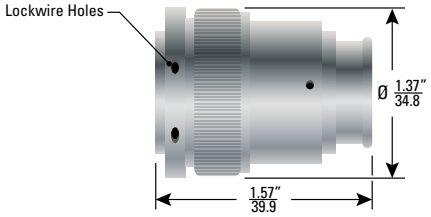
PLUG KITS

(Dimensions shown as in/mm)

Bayonet, Shielded (shown)



Threaded, Shielded (shown)



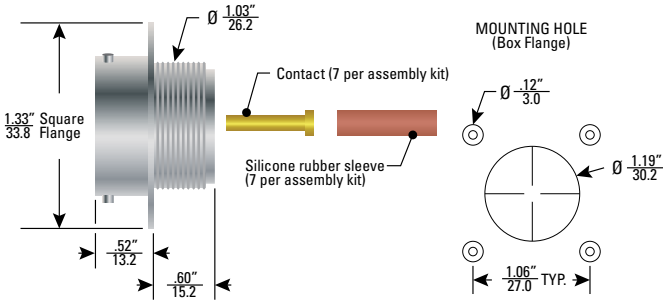
SERIES	BAYONET, SHIELDED	BAYONET, NON-SHIELDED	THREADED, SHIELDED	THREADED, NON-SHIELDED
1804	167-9704	167-9601	167-9702	167-9703
1807	167-9708	167-9709	167-9691	167-9693

- Shielded Plug Kits use wire 167-9346
- Non-shielded Plug Kits use wire 167-9543
- 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.
- Assembly instructions can be found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.

RECEPTACLE

Bayonet, Front, Box Flange Mount with Contact Kit

1807: 178-8741

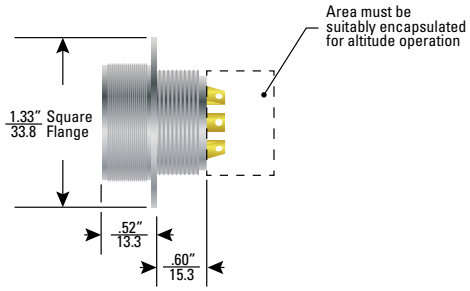


- **Mounting:** See optional Box Flange mounting hole
- Note: Contacts to be soldered to cable, inserted & bonded into insulator. Assembly instructions can be found at www.teledynereynolds.com or by contacting Teledyne Reynolds' Engineering.

Threaded, Front, Box Flange Mount

1804: 167-9706
1807: 167-9711

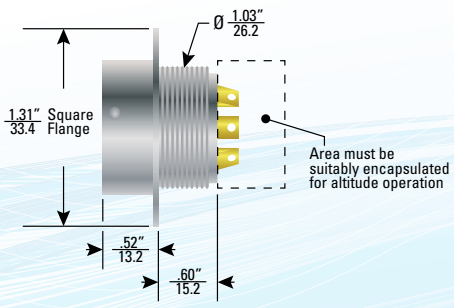
- **Mounting:** See optional Box Flange mounting hole



Bayonet, Front, Box Flange Mount with Molded-in Contacts

1804: 167-9707
1807: 167-9712

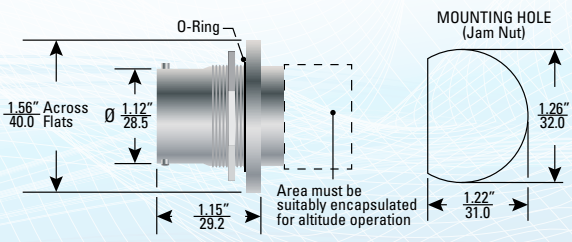
- **Mounting:** See optional Box Flange mounting hole



Sealed, Bayonet, Rear, Jam Nut Mount

1804: 167-8819
1807: 167-8666

- **Panel Mounting Torque:** 84 ± 2 in-lbs
- **Mounting:** See optional Jam Nut mounting hole
- **Pressure:** Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** $1x10^{-6}$ cc/s He @1 ATM differential pressure



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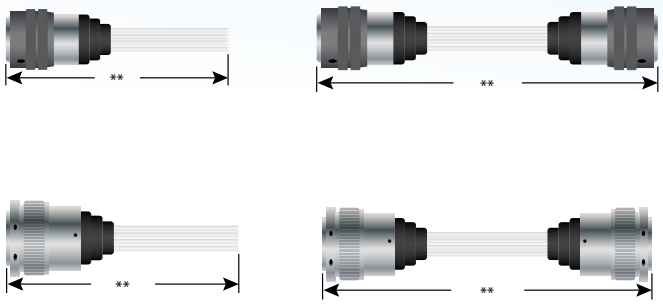
Approved for Public Release: MP/039/17

PLUG CABLE ASSEMBLIES

1804	SINGLE-ENDED	DOUBLE-ENDED	WIRE
BAYONET, SHIELDED	167-9717	167-9713	167-9346
BAYONET, NON-SHIELDED	167-9658	167-9714	167-9543
THREADED, SHIELDED	167-9724	167-9720	167-9346
THREADED, NON-SHIELDED	167-9725	167-9721	167-9543

1807	SINGLE-ENDED	DOUBLE-ENDED	WIRE
BAYONET, SHIELDED	167-9718	167-9715	167-9346
BAYONET, NON-SHIELDED	167-9719	167-9716	167-9543
THREADED, SHIELDED	167-9726	167-9722	167-9346
THREADED, NON-SHIELDED	167-9727	167-9723	167-9543

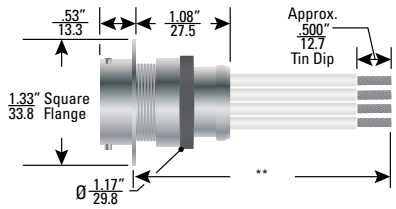


RECEPTACLE CABLE ASSEMBLIES

(Dimensions shown as in/mm)

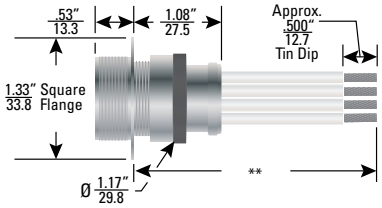
Bayonet, Front, Box Flange Mount

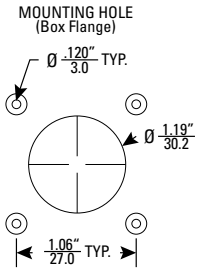
1804: **167-9661** Uses wire 167-9543
1807: **167-8730** Uses wire 167-9543
- Plastic Insulator
- **Mounting:** See optional Box Flange mounting hole



Threaded, Front, Box Flange Mount

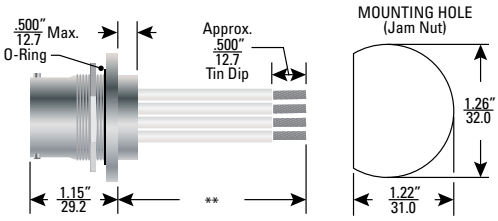
1804: **167-8732** Uses wire 167-9543
1807: **167-9730** Uses wire 167-9543
- Plastic Insulator
- **Mounting:** See optional Box Flange mounting hole





Sealed, Rear, Jam Nut Mount

1804: **167-8731** Uses wire 167-9543
1807: **178-7006** Uses wire 167-9543
- Plastic Insulator
- **Panel Mounting Torque:** 84 ± 2 in-lbs
- **Mounting:** See optional Jam Nut mounting hole
- **Pressure:** Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** 1x10^{-6} cc/s He @1 ATM differential pressure



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 (Pin)	Recept. Contact Material/Finish (Socket)	Wire Type	Wire Insulation	Braid Termination	Test Voltage @ 70,000 ft (kVDC)	Test Voltage @ Sea Level (kVDC)
1804	15	70,000	-55 to 125	7.5†	Plastic	Silicone	Bayonet or Threaded	Al/Ni	Brass/Au	BeCu/Au with CRES hood	Shielded or Non-shielded	FEP	Clamp	22	N /A
1807	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

WIRE SPECIFICATIONS

Part Number	Operating Voltage (kVDC)	Conductor			Insulation		Shielding			Jacket		Impedance Ω	Attenuation dB/100 ft @ 400 MHz	Capacitance pF/ft (Nom.) @ 1 kHz
		AWG	Strands	Plating	Material	ø in./mm	AWG	Plating	ø in./mm	Material	ø in./mm			
167-9543	21	20	19/32	TPC	FEP	0.080 / 2.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
167-9346	22	22	19/34	SPC	•	•	36	SPC	0.100 / 2.54	FEP	0.125 / 3.18	43	10.6	31

†Current rating is per pin for multi-pin connectors. Based on your specific application, additional derating may be required.
**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 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.**

LOW CORONA DISCHARGE CONNECTORS

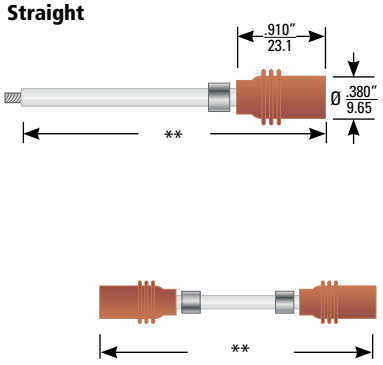
This series of push-on/pull-off Silicone In-line Disconnect (SID) connectors provides a reliable 15 kVDC high voltage connection for use in military and aerospace applications.

A unique interface sealing system allows these connectors to perform well under vibration, shock, altitude and temperature extremes. Mated SID assemblies also have excellent corona characteristics.

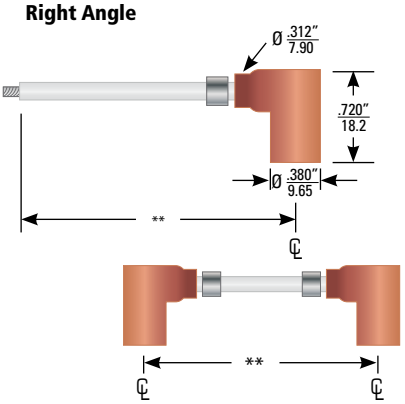
PLUG CABLE ASSEMBLIES

(Dimensions shown as in/mm)

Straight

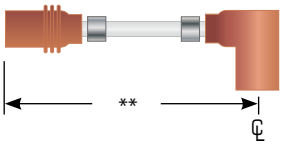


Right Angle



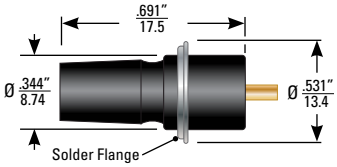
	SINGLE-ENDED	DOUBLE-ENDED	WIRE DIAMETER (in./mm)	WIRE P/N
STRAIGHT	178-6076	178-6078	.165 / 4.19	178-6179
RT. ANGLE	178-6080	178-6082	.165 / 4.19	178-6179
HYBRID	N/A	178-6084	.165 / 4.19	178-6179

Hybrid



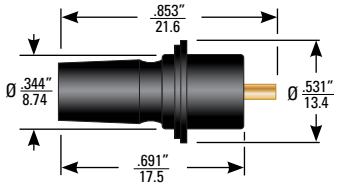
RECEPTACLES

Sealed, Front Mount, Solder Flanged
26RC1031



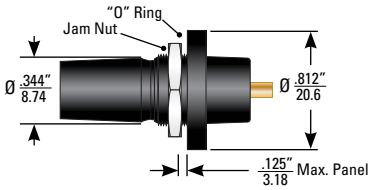
- **Mounting:** Solder flange
- Sealed for 1 ATM differential pressure
- **Max Leak Rate:** 1 x 10^{-6} cc/s He @ 1ATM differential pressure

Non-Sealed, Front Mount, Plastic Flanged
29RC1031



- **Mounting:** Designed for encapsulation or bonding

Sealed, Rear Mount, Flanged Jam Nut
60RC1031

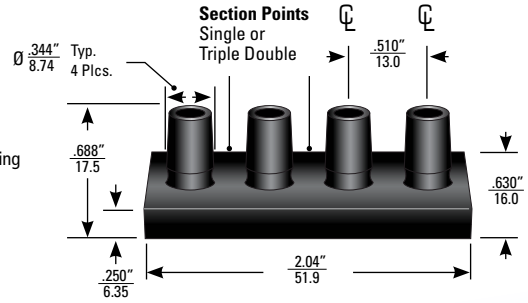


- **Mounting:** Jam nut flange
- Sealed for 1 ATM differential pressure
- **Max Leak Rate:** 1 x 10^{-6} cc/s He @ 1ATM differential pressure

Non-Sealed, 4-Pin, Receptacle Block
34RC1031

- **Mounting:** Designed for encapsulation or bonding

Note: Block can be precision cut by customer to convert to single, double or triple pin connector



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
SID	15	70,000	-54 to 95	7.5	Plastic	Silicone	Push-Pull	N/A	BeCu/Au with CRES Hood	Brass/Au	Non-Shielded	Silicone	N/A	20	N/A

WIRE SPECIFICATIONS

Part Number	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			
178-6179	25	20	19/32	SPC	Silicone	0.165 / 4.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

****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 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.

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Approved for Public Release: MP/039/17

CENTURY+ SERIES

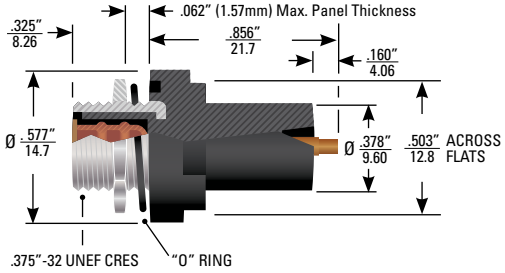
Century+ series is designed with a larger interface seal than what is used in the PeeWee series enabling it to be rated at 18 kVDC.

RECEPTACLES

(Dimensions shown as in/mm)

178-9472

- **Mating Torque:** 5 to 6 in-lbs
- **Panel Mounting Torque:** 8 to 10 in-lbs

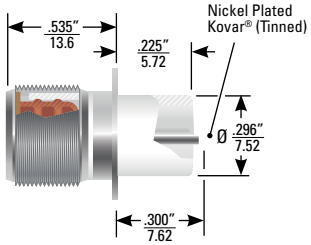


- **Max. Leak Rate:** $1x10^{-6}$ cc/s He @1 ATM differential pressure

Ceramic-to-Metal Brazed, Hermetic

178-7541

- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** $1x10^{-8}$ cc/s He @1 ATM differential pressure

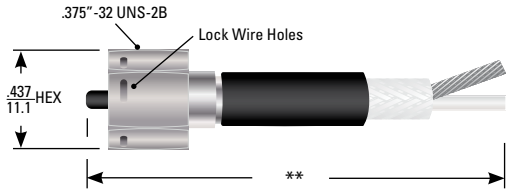


CABLE ASSEMBLIES

Single-Ended, Shielded

178-9482

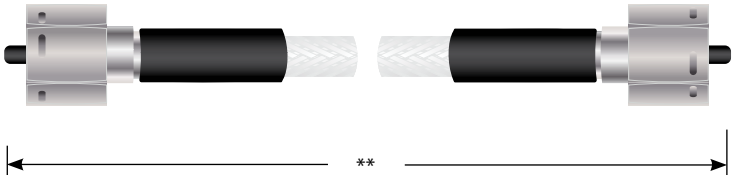
- Uses Wire 167-8726



Double-Ended, Shielded

178-9483

- Uses Wire 167-8726



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
CENTURY+	18	70,000	-55 to 125	5	Plastic or Ceramic	Plastic	Threaded	CRES	BeCu/Au with CRES Hood	Brass/Au or Kovar™	Shielded	FEP	Band	25	N/A

WIRE SPECIFICATIONS

Part Number	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			
167-8726	25	22	19/34	SPC	FEP	0.100 / 2.54	36	SPC	0.120 / 3.05	FEP	0.145 / 3.68	50	N/A	29.3

****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 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. Kovar is a registered trademark of the Carpenter Technology Corporation.

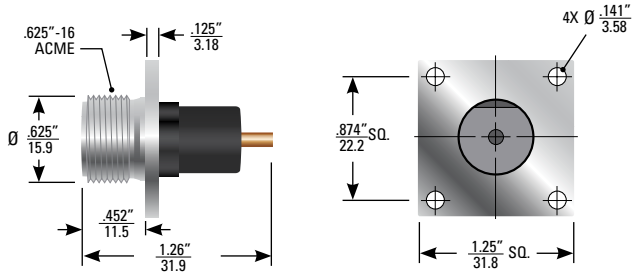
Maxxum Series connectors are robust in their construction, using stainless steel for the threaded coupling nut and body while also incorporating Teledyne Reynolds' patented Advanced Interface Sealing System™ for unmatched electrical performance at reduced atmospheric pressure. In addition, the cable assemblies use FEP insulated cable with a double braid crimped directly to the stainless steel body of the connector.

This series is ideally suited for use as a high power, TWT collector interconnect or in E-beam inspection equipment where a low partial discharge design and hermetic feedthrough are required.

RECEPTACLES

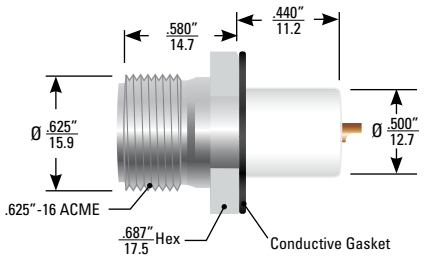
(Dimensions shown as in/mm)

Plastic, Flange Mounted, Non-Sealed
167-7708



- **Mating Torque:** 14 to 16 in-lbs
- **Mounting:** Requires clearance for .500"-20 UNF thread

Ceramic-to-Metal Brazed, Hermetic
178-9740

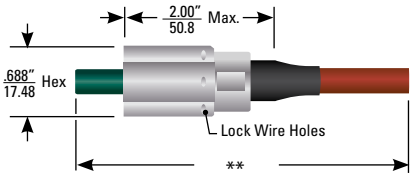


- Sealed for 1 ATM differential pressure
- **Max. Leak Rate:** $1x10^{-8}$ cc/s He @1 ATM differential pressure
- **Mating Torque:** 14 to 16 in-lbs
- **Metal Adapter to Ceramic Assembly Torque**: 20 to 22 in-lbs
- **Mounting:** Solder Flange

CABLE ASSEMBLIES

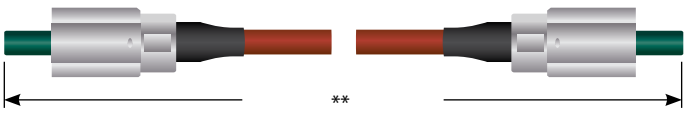
Single-Ended, Shielded
178-9433

- Uses Wire 167-8556



Double-Ended, Shielded
178-9434

- Uses Wire 167-8556



(• = Same value as above)

SERIES SPECIFICATIONS

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
MAXXUM*	25	70,000	-55 to 125	9.9	Plastic or Ceramic	Plastic	Threaded	CRES	BeCu/Au with CRES Hood	Brass/Au or Kovar™	Shielded	FEP	Solder	33	N/A

WIRE SPECIFICATIONS

Part Number	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			
167-8556	40	20	19/32	SPC	FEP	.150/3.81	36	SPC	0.120 / 3.05	FEP	0.145 / 3.68	50	N/A	29.3

* The Maxxum series was previously known as the 725 series.
****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 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. Kovar is a registered trademark of the Carpenter Technology Corporation.

Rev. 00-082017

Approved for Public Release: MP/039/17

AWG	Stranding	Approximate Diameter		Cross Section	DC Resistance	Current Rating
		inches	mm	mm	Ohms/1000 m	(amps) 70kft free air @ 80° C*
30	Solid	.010	0.25	0.051	338.6	2.5
30	7/38	.012	0.30	0.056	309.1	2.5
30	19/42	.013	0.32	0.060	288.1	2.5
30	41/46	.012	0.30	0.051	337.3	2.5
29	Solid	.011	0.29	0.064	268.4	2.9
29	51/46	.014	0.35	0.064	271.3	2.9
28	Solid	.013	0.32	0.081	212.9	3.3
28	7/36	.015	0.38	0.089	194.6	3.3
28	19/40	.016	0.40	0.095	181.1	3.3
28	41/44	.015	0.37	0.081	212.3	3.3
28	65/46	.015	0.39	0.081	212.9	3.3
26	Solid	.016	0.40	0.130	133.9	4.3
26	7/34	.019	0.48	0.141	122.4	4.3
26	10/36	.020	0.51	0.130	136.2	4.3
26	19/38	.020	0.50	0.151	113.8	4.3
26	51/42	.022	0.56	0.160	107.3	4.3
26	66/44	.019	0.48	0.131	131.9	4.3
24	Solid	.020	0.51	0.205	84.3	5.7
24	7/32	.024	0.61	0.224	76.8	5.7
24	10/34	.025	0.64	0.201	85.6	5.7
24	16/36	.024	0.61	0.201	85.0	5.7
24	19/36	.025	0.64	2.441	71.5	5.7
24	41/40	.023	0.59	0.205	84.0	5.7
22	Solid	.025	0.64	0.326	52.8	7.5
22	7/30	.030	0.76	0.356	48.2	7.5
22	19/34	.032	0.80	0.383	44.9	7.5
22	26/36	.030	0.75	0.329	52.5	7.5
22	65/40	.031	0.78	0.326	52.5	7.5
20	Solid	.032	0.81	0.518	33.5	9.9
20	7/28	.038	0.96	0.567	30.5	9.9
20	10/30	.040	1.02	0.509	33.8	9.9
20	19/32	.040	1.01	0.609	28.2	9.9
20	26/34	.037	0.94	0.524	32.8	9.9
20	105/40	.039	0.99	0.526	32.8	9.9
18	Solid	.040	1.02	0.823	21.0	13.1
18	7/26	.048	1.21	0.901	19.0	13.1
18	16/30	.048	1.23	0.815	21.0	13.1
18	19/30	.050	1.27	0.968	17.7	13.1
18	41/34	.047	1.19	0.826	21.0	13.1
18	65/36	.049	1.25	0.823	21.0	13.1
18	168/40	.053	1.34	0.824	20.3	13.1
16	Solid	.051	1.29	1.309	14.1	15.0
16	7/24	.060	1.53	1.433	12.1	15.0
16	19/29	.056	1.43	1.220	14.1	15.0
16	26/30	.059	1.50	1.220	14.1	15.0
16	41/32	.059	1.50	1.326	13.3	15.0
16	65/34	.062	1.57	1.309	13.3	15.0
16	260/40	.068	1.73	1.303	13.3	15.0
14	Solid	.064	1.63	2.081	8.2	20.0
14	7/22	.073	1.85	2.285	7.6	20.0
14	19/27	.071	1.80	1.940	8.9	20.0
14	41/30	.075	1.89	2.088	8.2	20.0
12	7/20	.096	2.44	3.660	4.9	27.3
12	19/25	.090	2.27	3.085	5.6	27.3
12	65/30	.098	2.50	3.310	5.2	27.3

***Ratings based on MIL-W-5088 for a single wire with maximum rated operating temperature of 125°C.**

INDEX BY PART NUMBER

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TELEDYNE REYNOLDS

Everywhereyoulook™

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