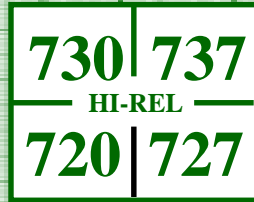


Series



GENERAL SPECIFICATIONS

For Military/Aerospace Applications

Series 700 HI-REL Cable Assemblies, Plugs and Receptacles

These HI-REL assemblies are rated from 10 to 25 KVDC and will operate at altitudes up to 70,000 ft. over a temperature range of -55°C to +125°C. In comparison to the C series, the HI-REL series has improved temperature range exposure at altitude operation due to incorporation of annular sealing rings on the plug insulator.

HI-REL plugs are offered in kit form when customers find it necessary to fabricate cable assemblies. Customers should use silicone rubber or silicone coated FEP cable of a diameter matching the rear insulator hole. Fluorosilicone rubber insulators are available for applications where Coolanol™ or other fluids that cause silicone rubber to swell may exist.

Plastic bodies are included in the HI-REL plug design to captivate the coupling nut and prevent tearing of silicone insulators from overtorque during mating.

Cable assemblies are 100% tested at a level above the rated voltage and a simulated altitude of 70,000 ft.. Only approved military quality materials are used in the manufacture of these connectors with full traceability of manufacturing processes.

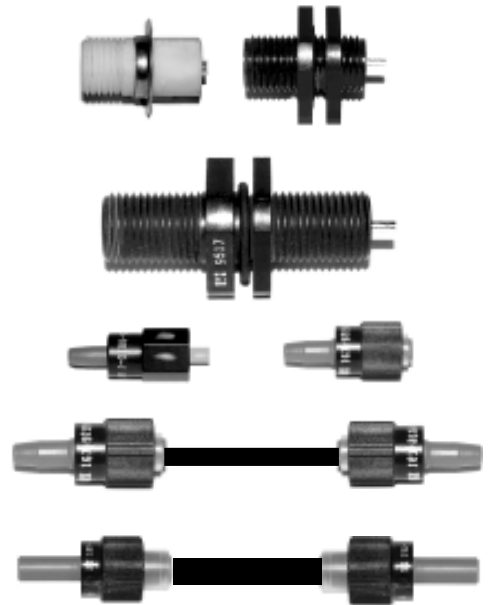
Series 700 HI-REL connectors have been widely used for more than 25 years in Military/Aerospace applications. Typical applications are:

- Electronic Countermeasure Systems (ECM) • TWT connections
- Lasers • Airborne high voltage power supplies

Interface cleaning

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

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



GENERAL SPECIFICATIONS

	<u>730/830</u>	<u>737</u>	<u>720</u>	<u>727</u>
Voltage Rating: Sea level to 70,000 ft.	10 KVDC	15 KVDC	20 KVDC	25 KVDC
100% test voltage @ 70,000 ft. (ambient temp.)	15 KVDC	18 KVDC	25 KVDC	35 KVDC
Operating temperature range	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C
LGH I* series mating compatibility	LGH 1/2I	LGH 1/2LI	LGH 1I	LGH 1LI
Plug insulator material	rubber	rubber	rubber	rubber
Receptacle insulator material	plastic	plastic	plastic	plastic
Coupling ring material	plastic	plastic	plastic	plastic
Metal coupling ring available (special order)	Yes	Yes	Yes	Yes
Male contact size (Recpt.) Dia. Inches/mm	.063/1.6	.063/1.6	.063/1.6	.063/1.6
Male contact material/finish	Brass/Gold plate	Brass/Gold plate	Brass/Gold plate	Brass/Gold plate
Female contact material/finish (Plug)	Be Cu/Gold plate	Be Cu/Gold plate	Be Cu/Gold plate	Be Cu/Gold plate
Female contact hood material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Front and rear mount receptacles available	Front only	Yes	Front only	Yes
Right angle receptacles available	Yes	No	Yes	No
Ceramic-to-metal receptacles available	Yes	No	Yes	No

Cable Assembly
 Length vs Manufacturing
 Tolerance Chart

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

*LGH is a trademark of AMP, Incorporated

** Silicone coated

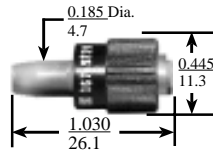
Series 730/830 HI-REL 10 KVDC

Altitude Rated
For Military/Aerospace Applications
Operating Temperature:
-55°C to +125°C

Plugs

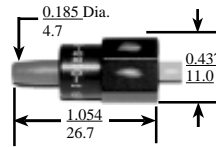
Plug 730 Series (plastic coupling nut)

P/N 167-9151 Silicone insulator for .090 Dia. wire
P/N 167-9219 Silicone insulator for .150 Dia. wire



Plug 830 Series (metal coupling nut)

P/N 167-8810 Silicone insulator for 0.090 Dia. wire
P/N 167-8811 Silicone insulator for 0.150 Dia. wire



Series 730/830 Plug Attributes

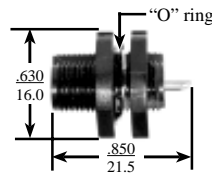
Operating voltage: 10 KVDC up to 70,000 ft.
Mating: Mates all series 730 & 830 receptacles and LGH 1/2I series receptacles. Also mates Reynolds C730 series RC1505, 2RC1505 and 3RC1505 receptacles. Note: This combination will reduce the upper operating temperature from +125°C to +95°C
For cable preparation and assembly instructions, see pp. 46 & 47
Bulk cable: See p. 40 for ordering and specifications

Receptacles

Receptacle (front mount, sealed)

P/N 167-9158 Silicone seals
P/N 167-9275 Fluorosilicone seals

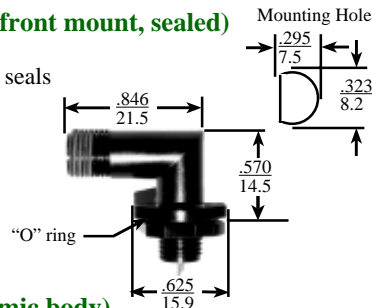
Leak Test: 1 X 10⁻⁶ cc/sec. He.



Receptacle Right Angle (front mount, sealed)

P/N 167-9228 Silicone seals
P/N 167-9294 Fluorosilicone seals

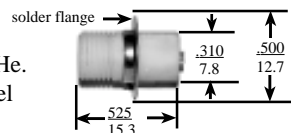
Leak Test: 1 X 10⁻⁶ cc/sec. He.



Receptacle (flanged ceramic body)

P/N 167-8626 Ceramic-to-metal hermetic seal. Front mount.

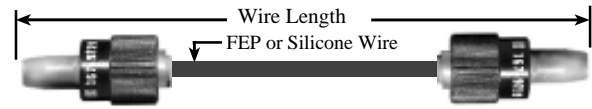
Leak Test: 1 X 10⁻⁸ cc/sec. He.
Flange Material: Iron nickel alloy with Gold Plate



Series 730 Receptacle Attributes

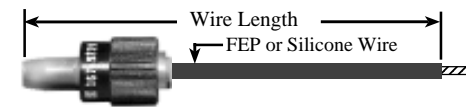
Operating voltage: 10 KVDC up to 70,000 ft.
Pressure: Sealed for 15 psi differential pressure.
Ordering: Use the applicable Part Number
Mating: Mates all Series 730, 830 and LGH 1/2I lead assemblies. Also mates all 10 KVDC rated Reynolds C730 lead assemblies; this combination will reduce the upper operating temperature from +125°C to +95°C.

Cable Assemblies



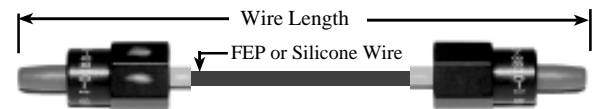
Series 730 Double-Ended Cable Assembly

P/N 167-9872 .080 FEP wire & P/N 167-9151 connectors
P/N 167-9210 .150 silicone wire & P/N 167-9219 connectors
P/N 167-9875 .080 FEP wire & P/N 167-9274 connectors using fluorosilicone rubber insulators



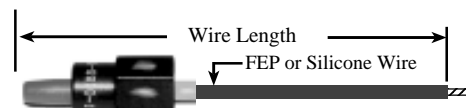
Series 730 Single-Ended Cable Assembly

P/N 167-9876 .080 FEP wire & P/N 167-9151 connector
P/N 167-9213 .150 silicone wire & P/N 167-9219 connector
P/N 167-9879 .080 FEP wire & P/N 167-9274 connector using a fluorosilicone rubber insulator



Series 830 Double-Ended Cable Assembly (metal coupling nut)

P/N 167-8813 .080 FEP wire & P/N 167-8810 connectors
P/N 167-8815 .150 silicone wire & P/N 167-8811 connectors
P/N 167-8855 .080 FEP cable & P/N 167-8782 connectors using fluorosilicone rubber insulators



Series 830 Single-Ended Cable Assembly (metal coupling nut)

P/N 167-8812 .080 FEP wire & P/N 167-8810 connector
P/N 167-8814 .150 silicone wire & P/N 167-8811 connector
P/N 167-8854 .080 FEP wire & P/N 167-8782 connector using a fluorosilicone rubber insulator

Series 730/830 Cable Assembly Attributes

Operating voltage: 10 KVDC up to 70,000 ft.
Test Voltage: 15 KVDC @ 70,000 ft. (simulated) ambient temp.
Mating connectors: Mates all series 730 & 830 receptacles and all LGH 1/2I series receptacles. Also mates Reynolds C730 receptacles RC1505, 2RC1505 and 3RC1505; this combination will reduce the upper operating temperature from +125°C to +95°C
Ordering: See Cable Assembly Ordering Information, below
Bulk wire & cable: See p. 40 for ordering and specifications

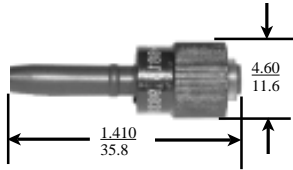
Cable Assembly Ordering Information

Order by Part Number
Use "F" for feet, "N" for inches.
Example: Cable Assembly 167-9872 10 feet 8 inches in length, is ordered as P/N 167-9872-10F-8N

Series **737** HI-REL 15 KVDC

Altitude Rated
For Military/Aerospace Applications
Operating Temperature:
-55°C to +125°C

Plugs



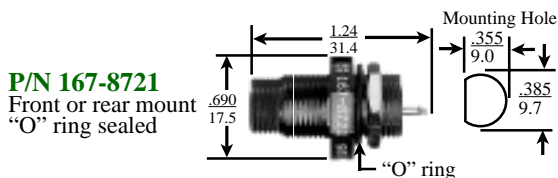
Series 737 Plugs

- P/N 167-8816** Silicone insulator for 0.090 Dia. wire
- P/N 167-9391** Silicone insulator for 0.150 Dia. wire

Series 737 Plug Attributes

Operating voltage: 15 KVDC up to 70,000 ft.
Mating: Mates all series 737 receptacles and LGH 1/2LI Series receptacles. Also mates Reynolds C737 series RC1515, 2RC1515 and 13RC1515 receptacles; this combination will reduce the upper operating temperature from +125°C to +95°C
For cable preparation and assembly instructions, see pp. 46 and 47
Bulk cable: See p. 40 for ordering and specifications

Receptacles

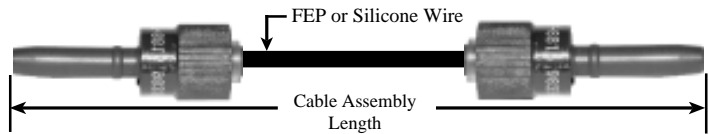


P/N 167-8721
Front or rear mount
"O" ring sealed

Series 737 Receptacle Attributes

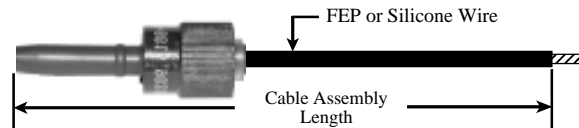
Operating voltage: 15 KVDC up to 70,000 ft.
Pressure: Sealed for 15 psi differential pressure
Leak test: 1 X 10⁻⁶ cc/sec. He
Ordering: Use the applicable Part Number
Mating: Mates all series 737 and LGH 1/2LI lead assemblies. Also mates all 15 KVDC rated Reynolds C737 lead assemblies; this combination will reduce the upper operating temperature from +125°C to +95°C

Cable Assemblies



Series 737 Double-Ended Cable Assembly

- P/N 167-8817** .080 FEP wire & P/N 167-8816 connectors
- P/N 167-9916** .150 silicone wire & P/N 167-9391 connectors
- P/N 167-8851** .080 FEP wire & P/N 167-8849 connectors using fluorosilicone rubber insulators



Series 737 Single-Ended Cable Assembly

- P/N 167-8818** .080 FEP wire & P/N 167-8816 connector
- P/N 167-9917** .150 silicone wire & P/N 167-9391 connector
- P/N 167-8850** .080 FEP wire & P/N 167-8849 connector using a fluorosilicone rubber insulator

Series 737 Cable Assembly Attributes

Operating voltage: 10 KVDC up to 70,000 ft.
Test voltage: 18KVDC @ 70,000 ft. (simulated). Ambient temperature
Mating connectors: Mates all Series 737 receptacles and all LGH 1/2LI series receptacles. Also mates Reynolds C737 receptacles RC1515, 2RC1515 and 13RC1515; this combination will reduce the upper operating temperature from +125°C to +95°C
Ordering: See Cable Assembly Ordering Information, below
Bulk wire & cable: See p. 40 for ordering and specifications

Cable Assembly Ordering Information

Order by Part Number
Use "F" for feet, "N" for inches.
Example: Cable Assembly 167-8817 10 feet 8 inches in length, is ordered as **P/N 167-8817-10F-8N**

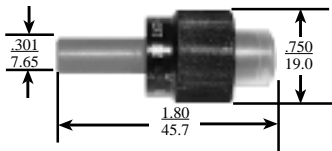
Series

720 HI-REL

20 KVDC

Altitude Rated
For Military/Aerospace Applications
Operating Temperature:
-55°C to +125°C

Plugs



Series 720 Plug

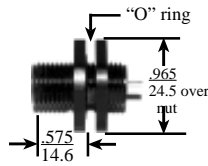
- P/N 178-6142** Silicone insulator for .110 Dia. wire
- P/N 167-9296** Silicone insulator for .150 Dia. wire
- P/N 167-9163** Silicone insulator for .180 Dia. wire
- P/N 167-9149** Silicone insulator for .280 Dia. wire

Series 720 Plug Attributes

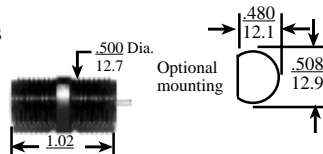
Operating voltage: 20 KVDC up to 70,000 ft.
Mating: Mates all series 720 receptacles and LGH II series receptacles. Also mates Reynolds C720 series RC1525 and 3RC1525 receptacles; this combination will reduce the upper operating temperature from +125°C to +95°C
For cable preparation and assembly instructions, see p. 48
Bulk cable: See p. 40 for ordering and specifications

Receptacles

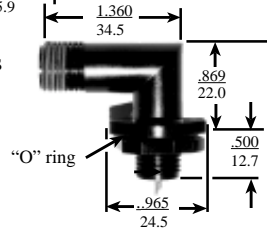
- P/N 167-9157** Silicone seals
- P/N 167-9263** Fluorosilicone seals
- Front mount
- Straight style
- Leak Test: 1×10^{-6} cc/sec. He.



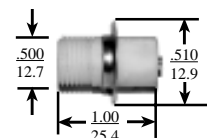
- P/N 167-8603** Silicone seals
- Note:** Same as P/N 167-9157 above, except flange has been removed.



- P/N 167-9227** Silicone seals
- P/N 167-9293** Fluorosilicone seals
- Front mount
- Right angle style
- Leak Test: 1×10^{-6} cc/sec. He.



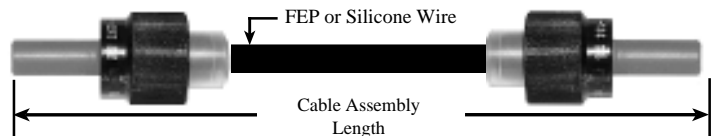
- P/N 167-9803**
- Ceramic-to-metal hermetic seal
- Iron nickel alloy flange
- Leak Test: 1×10^{-8} cc/sec. He.



Series 720 Receptacle Attributes

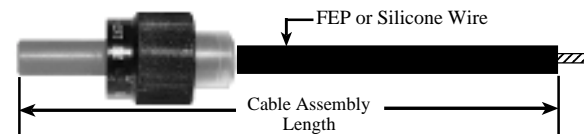
Operating voltage: 20 KVDC up to 70,000 ft.
Pressure: Sealed for 15 psi differential pressure
Ordering: Use the applicable Part Number
Mating: Mates all series 720 and LGH II lead assemblies
Also mates all 20 KVDC rated Reynolds C720 lead assemblies; this combination will reduce the upper operating temperature from +125°C to +95°C.

Cable Assemblies



Series 720 Double-Ended Cable Assembly

- P/N 178-6143** .100 FEP wire & 178-6142 connectors
- P/N 167-8798** .150 FEP wire & P/N 167-9296 connectors
- P/N 167-9201** .180 silicone wire & P/N 167-9163 connectors
- P/N 167-9203** .280 silicone wire & P/N 167-9149 connectors
- P/N 178-6153** .100 FEP wire & P/N 178-6152 using fluorosilicone insulators



Series 720 Single-Ended Cable Assembly

- P/N 178-6144** .110 SC* FEP wire & P/N 178-6142 connector
- P/N 167-9957** .150 FEP wire & P/N 167-9296 connector
- P/N 167-9164** .180 silicone wire & P/N 167-9163 connector
- P/N 167-9150** .280 silicone wire & P/N 167-9149 connector
- P/N 178-6154** .100 FEP wire & P/N 178-6152 using a fluorosilicone insulator

Series 720 Cable Assembly Attributes

Operating voltage: 20 KVDC up to 70,000 ft.
Test voltage: 25 KVDC @ 70,000 ft. (simulated). Ambient temp.
Mating connectors: Mates all series 720 receptacles and all LGH LI series receptacles. Also mates Reynolds C720 receptacles RC1525 and 3RC1525; this combination will reduce the upper operating temperature from +125°C to +95°C
Ordering: See Cable Assembly Ordering Information, below
Bulk wire & cable: See p. 40 for ordering and specifications

Cable Assembly Ordering Information

Order by Part Number
Use "F" for feet, "N" for inches.
Example: Cable Assembly 167-8798 10 feet 8 inches in length, is ordered as **P/N 167-8798-10F-8N**

* silicone coated

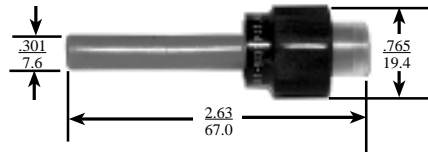
Series

727 HI-REL

25 KVDC

Altitude Rated
For Military/Aerospace Applications
Operating Temperature:
-55°C to +125°C

Plugs



Series 727 Plug

P/N 167-9449 Silicone insulator for .180 Dia. wire

P/N 167-9330 Silicone insulator for .280 Dia. wire

Series 727 Plug Attributes

Operating voltage: 25 KVDC up to 70,000 ft.

Mating: Mates all series 727 receptacles and LGH 1LI series receptacles. Also mates Reynolds C727 series RC1535 receptacles; this combination will reduce the upper operating temperature from +125°C to +95°C

For cable preparation and assembly instructions, see p. 48

Bulk cable: See p. 40 for ordering and specifications

Receptacles

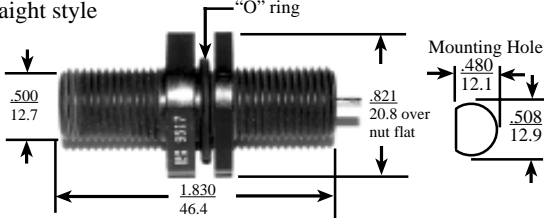
Series 727 Sealed Receptacle Connector

P/N 167-9336 Silicone seal

P/N 167-9337 Fluorosilicone seal

Front mount

Straight style



Series 727 Receptacle Attributes

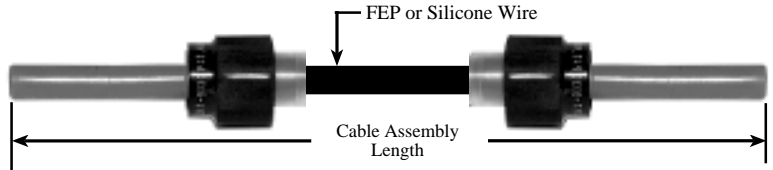
Operating voltage: 25 KVDC up to 70,000 ft.

Pressure: Sealed for 15 psi differential pressure

Ordering: Use the applicable Part Number

Mating: Mates all series 727 and LGH 1LI lead assemblies. Also mates all 25 KVDC rated Reynolds C727 lead assemblies; this combination will reduce the upper operating temperature from +125°C to +95°C

Cable Assemblies

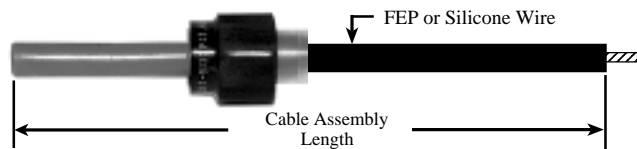


Series 727 Double-Ended Cable Assembly

P/N 167-8804 .180 FEP wire & P/N 167-9449 connectors

P/N 167-9333 .280 silicone wire & P/N 167-9330 connectors

P/N 167-8842 .180 FEP wire & P/N 167-8840 connectors using fluorosilicone rubber insulators



Series 727 Single-Ended Cable Assembly

P/N 167-8805 .180 FEP wire & P/N 167-9449 connector

P/N 167-9332 .280 silicone wire & P/N 167-9330 connector

P/N 167-8841 .180 FEP wire & P/N 167-8840 connector using a fluorosilicone rubber insulator

Series 727 Cable Assembly Attributes

Operating voltage: 25 KVDC up to 70,000 ft.

Test voltage: 25 KVDC @ 70,000 ft. (simulated). Ambient temp.

Mating connectors: Mates all series 727 receptacles and all LGH 1LI series receptacles. Also mates Reynolds C727 receptacle RC1535 ; this combination will reduce the upper operating temperature from +125°C to +95°C

Ordering: See Cable Assembly Ordering Information, below

Bulk wire & cable: See p. 40 for ordering and specifications

Cable Assembly Ordering Information

Order by Part Number

Use "F" for feet, "N" for inches.

Example: Cable Assembly 167-78804 10 feet 8 inches in length, is ordered as **P/N 167-8804-10F-8N**