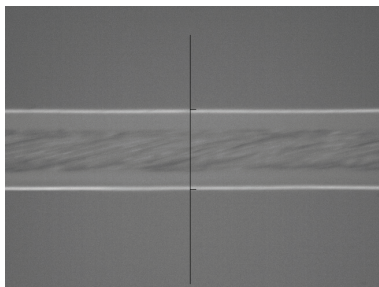


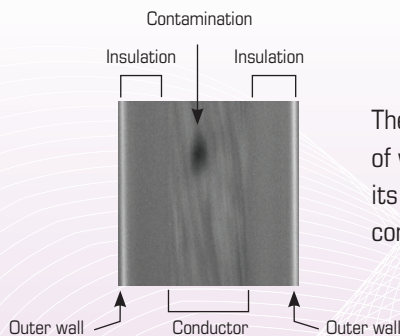
High Purity, Low Corona Discharge High Voltage Wire

INTRODUCTION

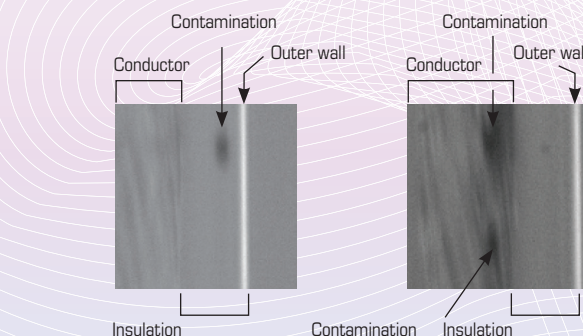
Teledyne Reynolds manufactures ultra purity high voltage wires that are designed to operate in high vacuum applications requiring thousands of hours of reliability. These cables can be supplied on reels or as leads in connectorized high voltage cable assemblies. These wires are designed to meet the general requirements of specifications such as MIL-DTL-16878, MIL-W-22759, MIL-C-17, but in addition meet "higher level" performance required for low corona, high voltage applications. Unique processing and testing of these wires enables them to be used in low pressure applications such as in spacecraft or other vacuum systems.



To the left is an example of wire insulation and its conductor **without** contamination captured by Teledyne Reynolds' proprietary visual inspection system, TRIVision.™



These are examples of wire insulation and its conductor **with** contamination.



Please note that any of our standard FEP or PFA wires can be converted to High Reliability type wires.

FEATURES

Materials: The cable utilizes a High Purity (HP) Perfluoroalkoxy (PFA) insulation with less contamination within the cable insulation providing little or no internal discharges. The enhanced purity and thermal stability reduces the occurrence of voids within the insulation which are sites for the onset of corona during operation.

Corona Detection: Through the use of our continuous corona detection system the wire is subjected to 100% partial discharge (corona) testing at AC voltages designed to detect defects in the wire insulation. Any sections in which discharges are detected are removed before moving on to the next step, optical examination.

Optical Examination: Using our proprietary TRIVision™ visual inspection technology the final cable product is subjected to 100% reel-to-reel inspection to detect contamination as small as .001 inch which would otherwise produce a potential for failure under operating conditions. (See example above)

APPLICATIONS

- Traveling wave tubes, magnetrons and klystrons used in space
- High voltage power supplies
- Semiconductor manufacturing equipment
- High energy physics research
- General space use



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Electrical Connectors, Wire and Cable Assemblies for Space or Ultra High Vacuum Applications

Typical Requirements:

- Vented and Non-Vented Connectors
- Low Outgassing Materials (TML < 1%; CVCMM < 0.1%)
- "Red plague" Resistant Conductors
- Ultrasonically Cleaned Conductors
- Non-magnetic Materials
- Low Partial Discharge Designs
- Cermic-to-Metal, Brazed, Hermetic Feedthroughs

Applications:

- Satellite Ion Propulsion
- Satellite Arcjet Thrusters
- Ultra High Vacuum Semiconductor Processing Equipment
- Miniature High Voltage Power Supplies
- Spark Igniter Connectors and Cables Assemblies
- Mass Spectrometers
- Tethered Satellite Connections

Product Heritage

Teledyne Reynolds (TRI) has an extensive heritage as being a key

supplier to the space community and is the preferred high voltage interconnection solution provider. Listed below are just a few of the spacecraft and/or missions in which TRI has successfully provided products to be used in mission critical systems.

- EUVE - Extreme Ultraviolet Explorer
- Cassini
- Huygens
- Hubble Space Telescope
- SOHO - Solar and Heliospheric Observatory
- TIMED - Thermosphere Ionosphere Mesosphere Energetics and Dynamics
- New Horizons
- Nozomi
- Rosetta
- AIM - Aeronomy of Ice in the Mesosphere
- IMAGE - Imager for Magnetopause-to-Aurora Global Exploration
- IBEX- Interstellar Boundary Explorer
- DS-1 - Deep Space 1
- Dawn
- MESSENGER - MErcury Surface, Space ENvironment GEOchemistry, and Ranging

Note: Product part numbers, dimensions and specifications are subject to change without notice. Products listed represent only a small selection of Teledyne Reynolds products please visit www.teledynereynolds.co.uk for most up to date product line. Contact Teledyne Reynolds Engineering to discuss custom designs. **WARNING:** Connectors should **NEVER** be handled mated or unmated when voltage is applied.

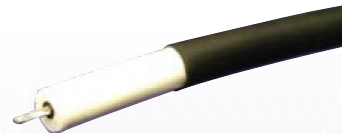
7 Pin Circular 15 kVDC
connectors for Ion Thrusters
(1807 Series shown)



Subminiature High Voltage Coaxial
Connector/Cable Assemblies with
Plastic or Ceramic Insulators (600
Series shown)



Also available are silicone wires
with semi-conductive layers to
eliminate partial discharges and
high voltage gradients. Voltages
range from 5 kVDC to 75 kVDC.



Miniature High Voltage
Push-Pull Connector
Cable Assemblies (Pee
Wee Series shown)



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