

# CATON

CONNECTOR CORPORATION

*...assuring mission success since 1973*

## HIGH VOLTAGE CABLE ASSEMBLIES



MILITARY AND DEFENSE  
SYSTEMS



SEMI-CONDUCTOR  
INDUSTRY



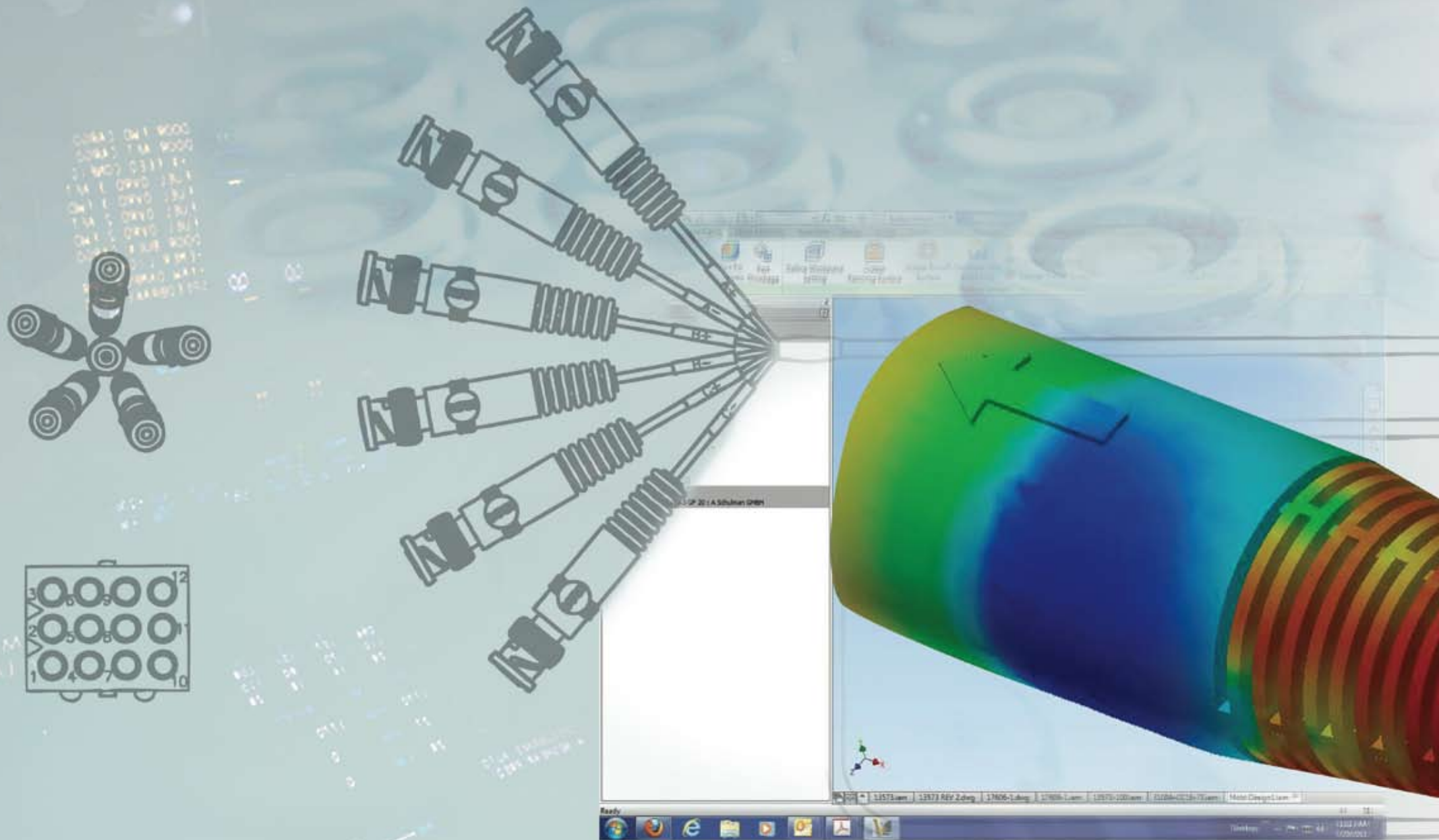
MEDICAL INDUSTRY



UTILITY SYSTEMS



AVIONIC SYSTEMS



Many of Caton's high voltage connector designs are capable of operating up to 70,000 ft while exposed to temperatures of -55c to +125c. Not all designs in this catalog are designed to operate at these extremes, but all will perform with a high degree of reliability. Please consult Caton to discuss your specific requirements.



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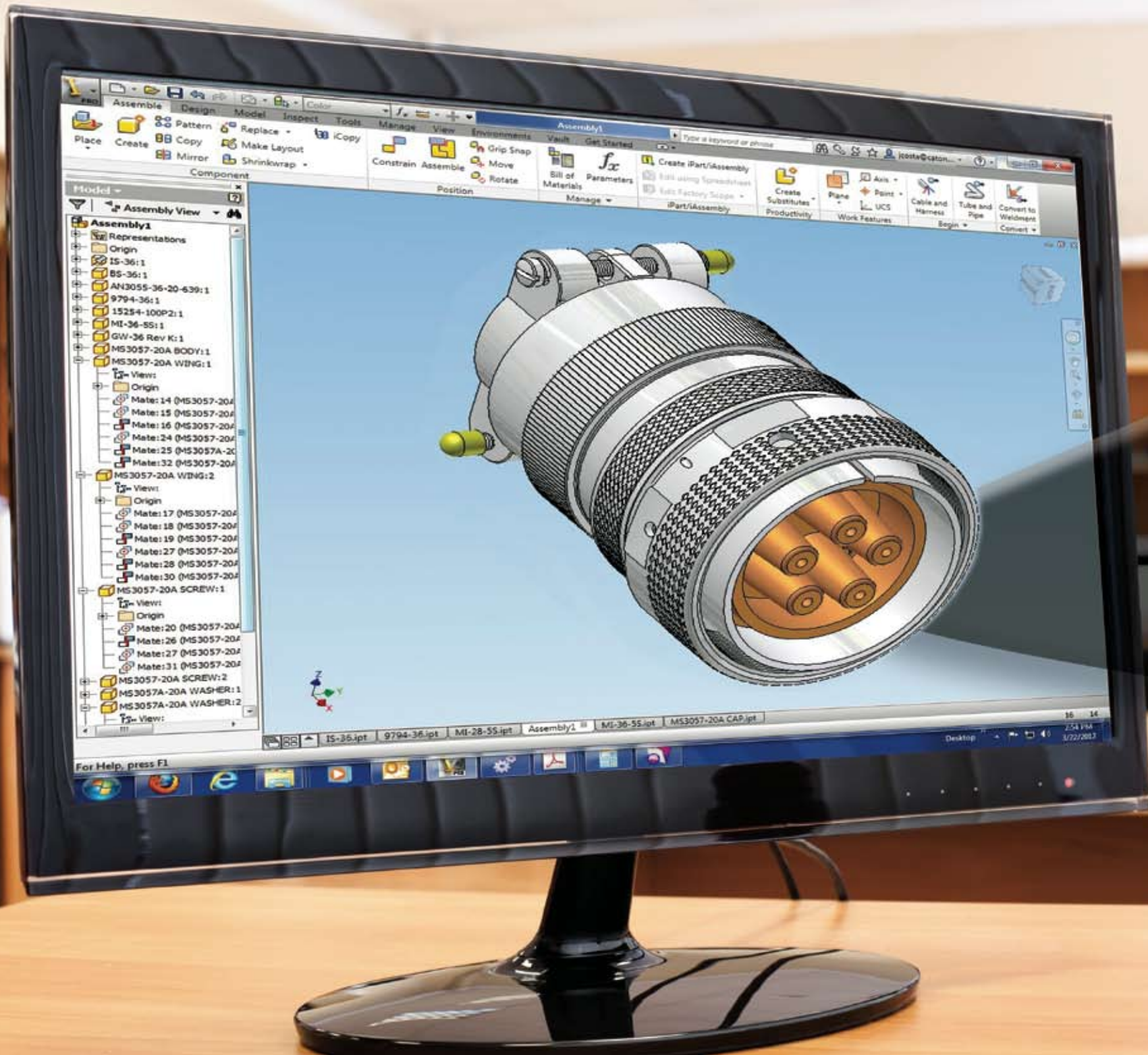
## Turning Ideas into Reality

Since 1973 Caton has provided assembly solutions that operate at voltages up to 100 kVDC and have partial discharge levels as low as 2 pC at voltages up to 40 kVRMS and 60 kVDC. Our connector insert configurations have up to 19 conductors, multi-shields and use single, double and triple extruded silicone cable and are built to lengths of up to 300 feet.

Caton has the experience and ingenuity to provide a comprehensive solution for your cable and connector needs, no matter the size or complexity of your project.

Caton can custom design or modify existing designs to suit individual needs. To offer the best value, we will first look into modifying an existing design to fulfill your project requirements. This may be as simple as a change in length or as complex as a total reconfiguration, involving additional breakouts, moldings and wiring.

Whether you come to Caton with your design or have us custom design to fit your needs; you can trust Caton to determine the best solution for your cable and connector needs.





## Conquering High Voltage Challenges

Caton's skilled team of engineers understands the challenges manufacturers face when designing high voltage cable assemblies. With decades of engineering experience, we will provide the most innovative and cost effective solutions for your system.

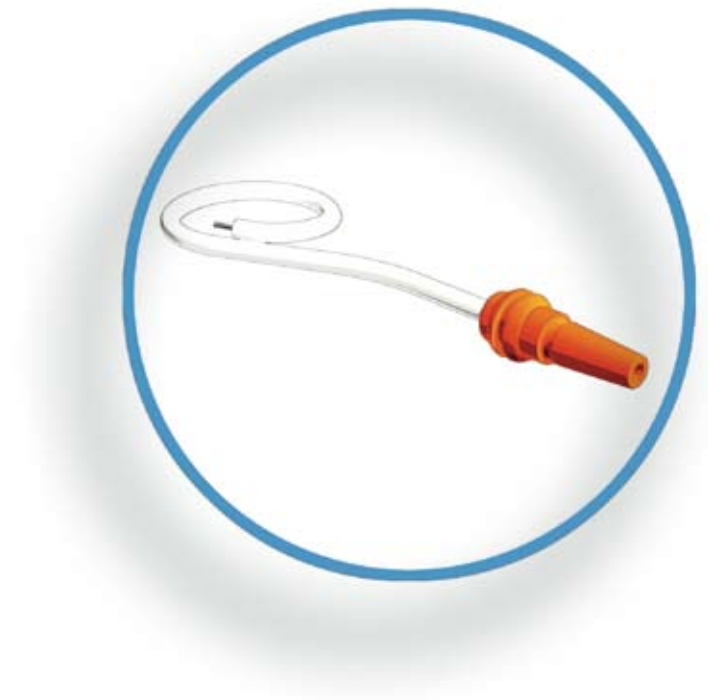
Emphasizing cost efficiency, ease of manufacturability and reliability, our engineering team provides affordable customized solutions for any application. Utilizing creative manufacturing techniques, our design engineers provide an outstanding and reliable product that exceeds design specifications every time.

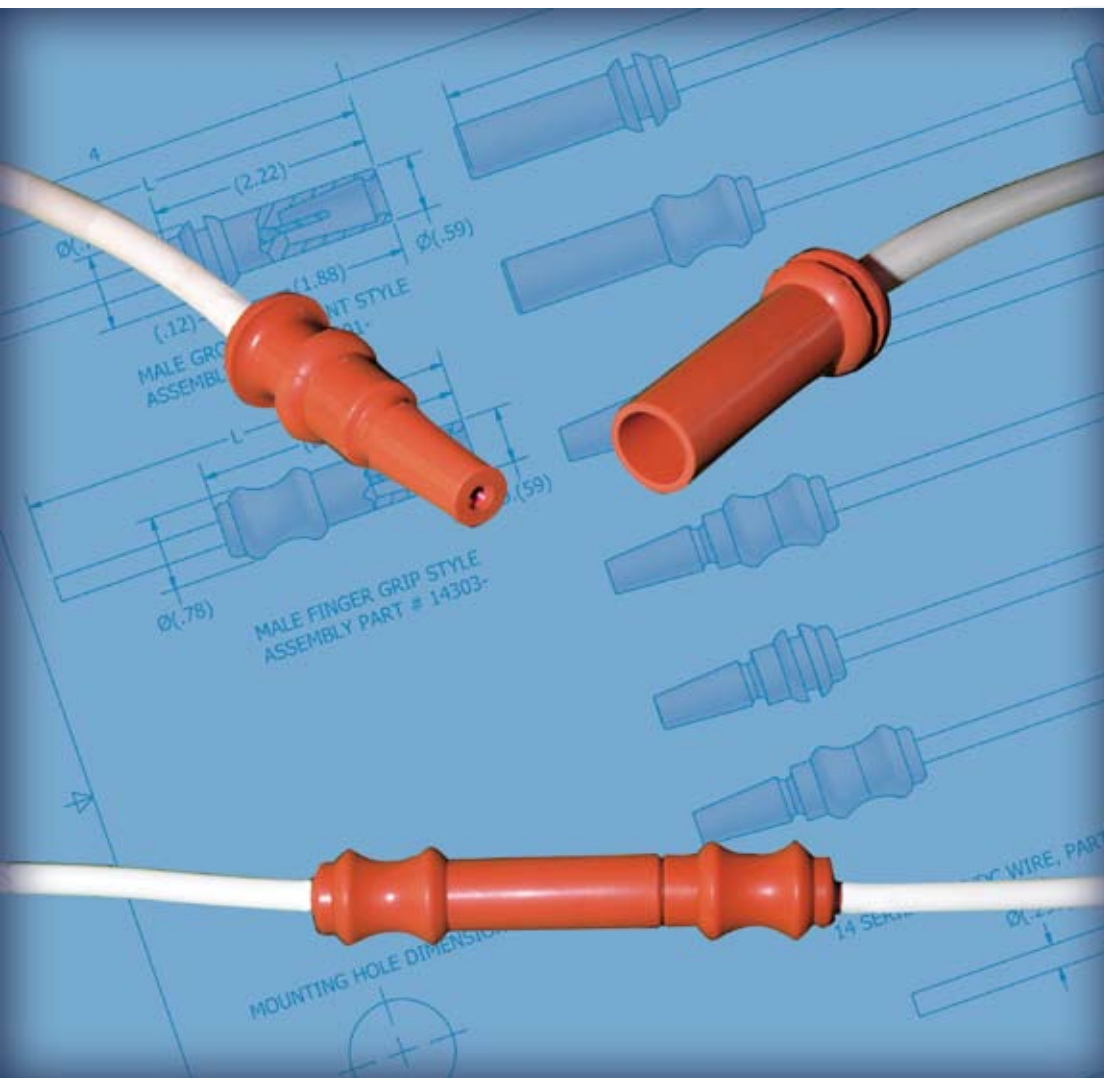
Caton's team is fully prepared to collaborate closely with our customers to ensure rewarding and successful outcome to every project. Based on electrical, mechanical and environmental design specifications, our experienced engineering team will work with you to develop state of the art detailed custom product drawings. Caton will develop your product from a design concept to a fully manufactured product.

## 14 Series

### 10-45 kVDC PANEL MOUNT & IN-LINE ASSEMBLIES

The 14 series assemblies are single conductor, inline assemblies designed for high voltage applications where high performance and a “steady-state” voltage is required at a lower cost than conventional shell type connectors. The connectors utilize Caton’s proven tapered conical interface design making the 14 series ideal for applications subject to high vibrations, shock and humidity. The silicone body is bonded directly to the wire for maximum dielectric strength which makes it ideal for quick connect and disconnect applications. The 14 series is offered in a panel mount and finger grip design and is available in a wide range of voltages.





## TECHNICAL FEATURES

- No-shell design
- Quick connect & disconnect
- Voltage ratings of 10-45 kVDC
- Amperage ranges from 4-10A
- Tapered conical interface
- Panel mount & finger grip
- Styles available in all voltage configurations
- Double ended designs available



## GENERAL SPECIFICATIONS

### 1.0 Electrical (When Properly Mated)

- 1.1 Operating Voltage: 10-45 kVDC
- 1.2 Current: 4-10 AMPS

### 2.0 Mechanical

- 2.1 Style: Panel Mount & Finger Grip
- 2.2 Plug Termination: Bonded directly to the Cable

### 3.0 Environmental

- 3.1 Operating Temperature Range: -55°C to +125°C

### 4.0 Materials

- 4.1 Connector Body: Silicone Rubber per A-A-59588, Class 2B (ZZ-R-765)
- 4.1.1 Male Connector: Color Red, Durometer, 70 Shore A
- 4.1.2 Female Connector: Color Red, Durometer, 50 Shore A
- 4.2 Pin Contact: Hard Brass per QQ-B-626
- 4.3 Socket Contact: Beryllium Copper Alloy, Grade M33-25 or M173
- 4.4. Pin and Socket: Gold Plated per MIL-G-45204, Class 1, Type II
- 4.5 Wire: Tin or Silver Plated Copper, Silicone Insulation
  - 10 kVDC, 20 AWG, 0.100 Diameter
  - 30 kVDC, 18 AWG, 0.200 Diameter
  - 40 kVDC, 16 AWG, 0.295 Diameter

## TYPICAL APPLICATIONS

- Land & airborne radar systems
- CRT & heads-up cockpit video display
- Harsh environments
- High-vibration applications

| PART NUMBER CONSTRUCTION CHART  |    |     |     |     |     |     |     |
|---------------------------------|----|-----|-----|-----|-----|-----|-----|
| ASSEMBLY LENGTHS                | L1 | L2  | L3  | L4  | L5  | L6  | L7  |
|                                 | 6" | 12" | 18" | 24" | 36" | 48" | 96" |
| CUSTOM LENGTHS: CONTACT FACTORY |    |     |     |     |     |     |     |

**TO CONSTRUCT A PART NUMBER, MATCH THE LENGTH "L" WITH AN ASSEMBLY NUMBER**

**EXAMPLE:** If you require assembly part # **14106-** and you want it to be **36"** long, then your part # would be **14106-L5**



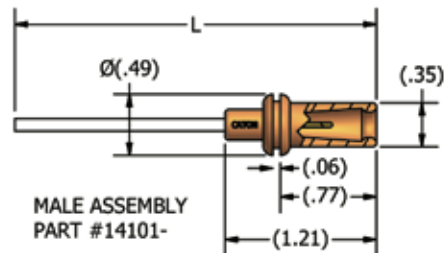
ASSEMBLY PART #14106-



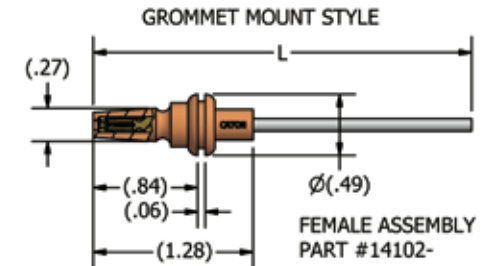
ASSEMBLY PART #14107-



ASSEMBLY PART #14105-

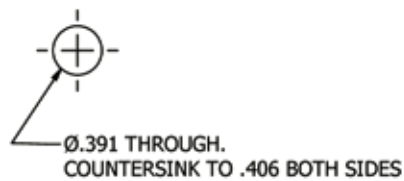


MALE ASSEMBLY PART #14101-



FEMALE ASSEMBLY PART #14102-

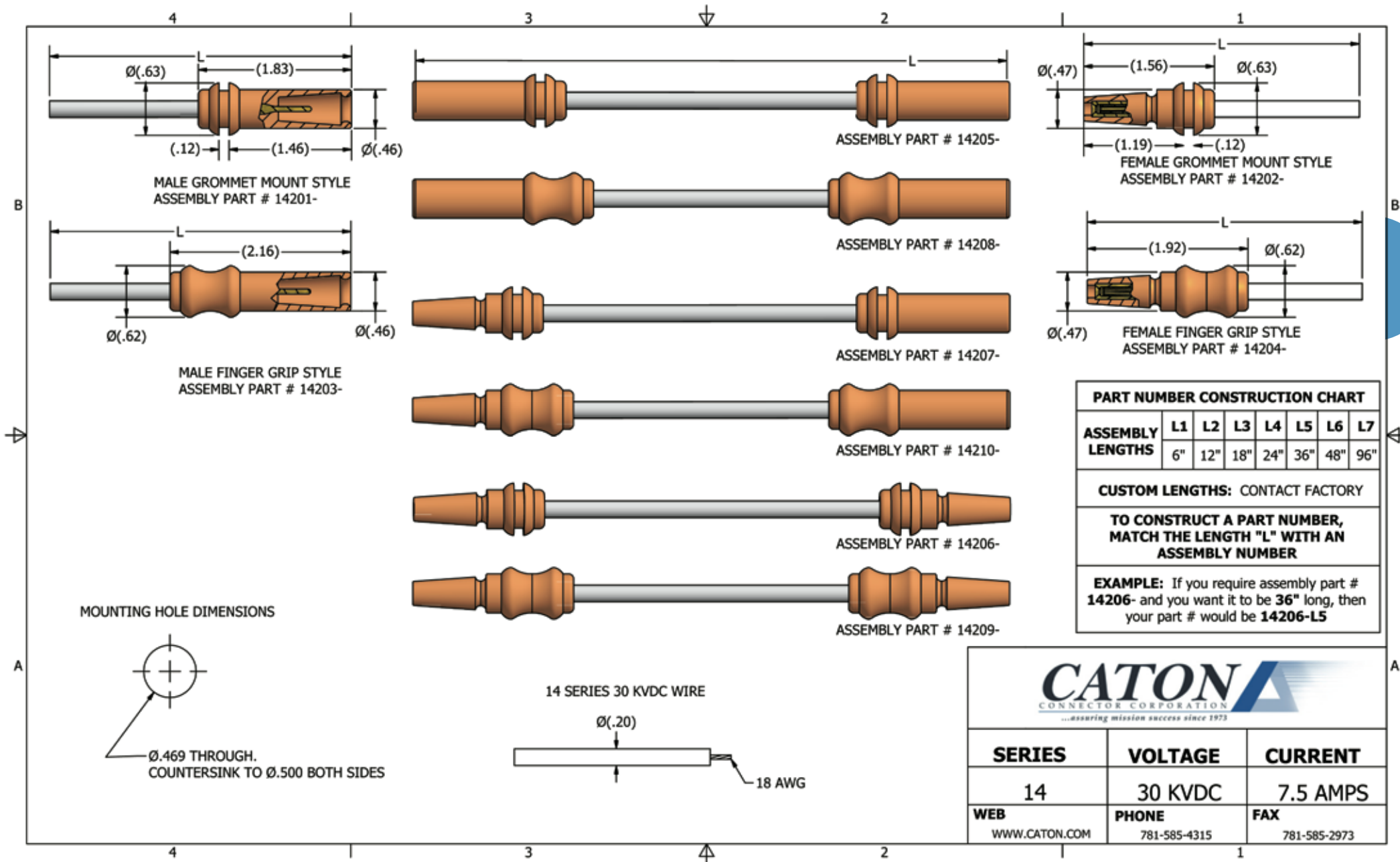
#### MOUNTING HOLE DIMENSIONS

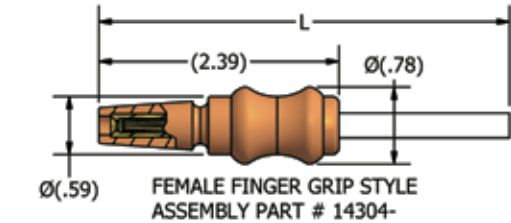
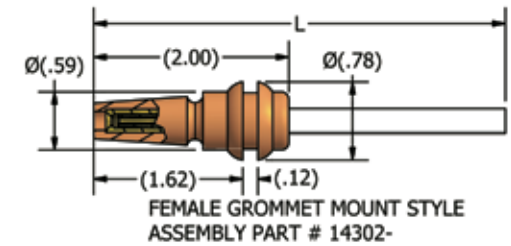
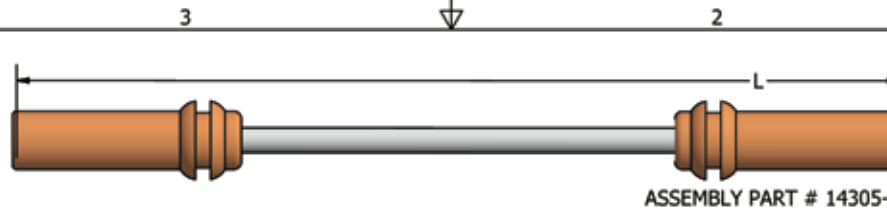
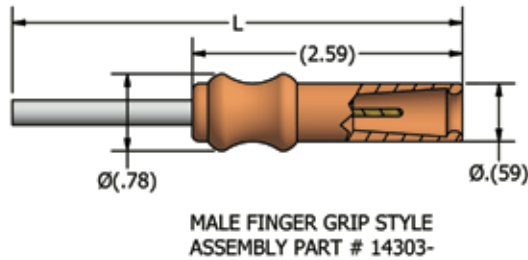
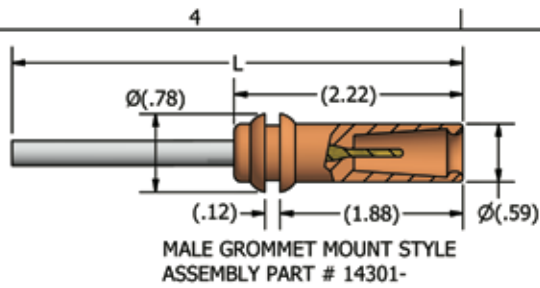


14 SERIES 10 KVDC WIRE, PART # CC20100



| <b>CATON</b><br><small>CONNECTOR CORPORATION</small><br><small>...assuring mission success since 1973</small> |                       |                     |
|---------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|
| SERIES                                                                                                        | VOLTAGE               | CURRENT             |
| 14                                                                                                            | 10 KVDC               | 4 AMPS              |
| WEB<br>WWW.CATON.COM                                                                                          | PHONE<br>781-585-4315 | FAX<br>781-585-2973 |





#### PART NUMBER CONSTRUCTION CHART

| ASSEMBLY LENGTHS | L1 | L2  | L3  | L4  | L5  | L6  | L7  |
|------------------|----|-----|-----|-----|-----|-----|-----|
|                  | 6" | 12" | 18" | 24" | 36" | 48" | 96" |

**CUSTOM LENGTHS:** CONTACT FACTORY

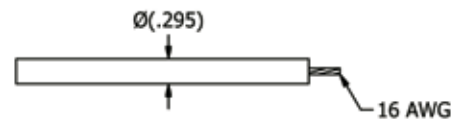
**TO CONSTRUCT A PART NUMBER,  
MATCH THE LENGTH "L" WITH AN  
ASSEMBLY NUMBER**

**EXAMPLE:** If you require assembly part # 14206- and you want it to be 36" long, then your part # would be **14306-L5**

#### MOUNTING HOLE DIMENSIONS



14 SERIES 45 KVDC WIRE, PART # CC45295



**CATON**  
CONNECTOR CORPORATION  
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| SERIES               | VOLTAGE               | CURRENT             |
|----------------------|-----------------------|---------------------|
| 14                   | 45 KVDC               | 10 AMPS             |
| WEB<br>WWW.CATON.COM | PHONE<br>781-585-4315 | FAX<br>781-585-2973 |

## Custom 14 Series Design

25 kVDC, 10 Amps

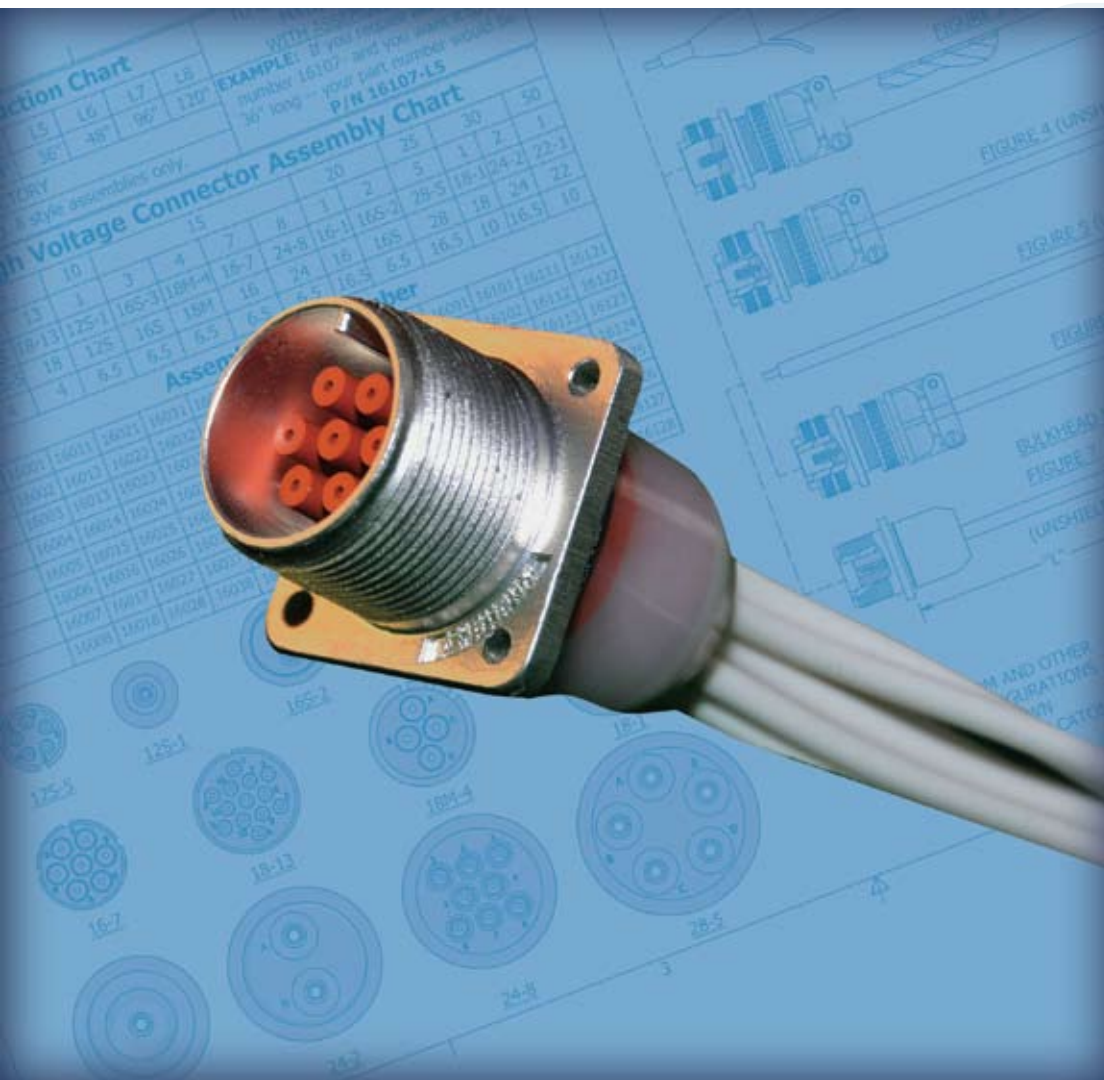


## 16 Series

### 5-50 kVDC MULTI-CONDUCTOR CABLE ASSEMBLIES

The 16 series cable assemblies are offered in multiple shell sizes, and multiple insert configurations. This series is designed for high voltage applications where high reliability is required in a wide range of temperature, altitude, and environment conditions. Termination of the connectors to the cable is a unique Caton technique utilizing vacuum degassed two part silicone RTV. This process together with the Caton designed silicone rubber tapered inserts, provide a termination impervious to the surrounding environment. The shell design is the proven MIL-C-5015 die cast aluminum available in a variety of sizes, finishes and plating options.





## TECHNICAL FEATURES

- 19 Insert Arrangements
- 10 Shell Sizes
- Voltage Capability 5-50 kVDC
- Amperage ranges from 4 -85A
- Corona-Resistant Designs
- Low Micro-Discharge Designs
- MIL-C-5015 Aluminum shells available in a variety of finishes and plating's

## TYPICAL APPLICATIONS

- Power Supplies
- Ship Board and Ground Radar
- Laser Equipment
- Satellite NAV Systems
- Land and Airborne Radar Systems



## GENERAL SPECIFICATIONS

### 1.0 Electrical

- 1.1 Operating Voltage: 5-50 kVDC
- 1.2 Current: 4-85 AMPS
- 1.3 Corona Resistant: Tapered Interfacial Seals

### 2.0 Mechanical

- 2.1 Style: Bulkhead and Inline Screw Coupling
- 2.2 Termination: Resilient Silicone Rubber Inserts, Encapsulation Bonded Directly to the Wire

### 3.0 Environmental

- 3.1 Altitude: Sea Level to 70,000 feet\*
- 3.2 Operating Temperature Range: -55°C to +125°C

### 4.0 Materials

- 4.1 Connector Body: Die Cast Aluminum Per QQ-A-591
- 4.2 Shell Plating: Bright Cadmium Per QQ-P-416, Class 2, Type II\*\*
- 4.3 Connector Inserts: Molded Silicone Rubber Per A-A-59588 (ZZ-R-765), Class 2B
  - 4.3.1 Male Insert Molding: Color Red, Durometer 50 Shore A
  - 4.3.2 Female Insert Molding: Color Red, Durometer 70 Shore A
- 4.4 Pin Contact: Per MIL-C-39029 or 1/2 Hard Brass Per QQ-B-62
- 4.5 Socket Contact: Per MIL-C-39029, QQ-B-626 or ASTM-B196
- 4.6 Contact Plating: Gold Plated Per MIL-G-45204, Class 1, Type II
- 4.7 Wire: Tin or Silver Plated Copper, Silicone Insulation
- 4.8 Cable Shielding: Braided, Tinned Copper Per A-A-59569 (QQ-B-575)
- 4.9 Cable Jacket: Silicone Rubber Per A-A-59588 (ZZ-R-765), Class 2B, Color Black

\* Rated altitude values vary by assembly. Contact Caton for assembly specific values.

\*\* All 16 series assemblies are available in a Rohs compliant version. The cadmium plating is replaced by an electroless nickel plating.

4

3

2

1

## Part Number Construction Chart

TO CONSTRUCT A PART NUMBER, MATCH LENGTH "L" WITH ASSEMBLY NUMBER

| ASSEMBLY | LENGTHS | L1 | L2  | L3  | L4  | L5  | L6  | L7  | L8   |
|----------|---------|----|-----|-----|-----|-----|-----|-----|------|
|          |         | 6" | 12" | 18" | 24" | 36" | 48" | 96" | 120" |

**EXAMPLE:** If you require assembly part number 16107- and you want it to be 36" long -- your part number would be **P/N 16107-L5**

CUSTOM LENGTHS: CONTACT FACTORY

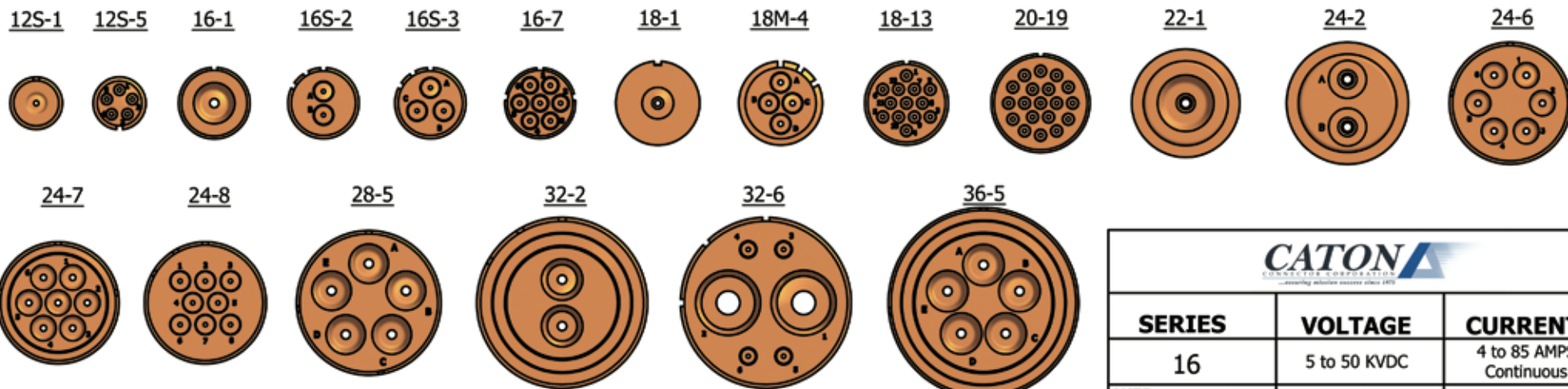
## 16 Series High Voltage Connector Assembly Chart

| Voltage, kVDC          | 5     |       |       | 10    | 15    |       |      |      | 20   |       |      | 25   |          |      | 30   |      |      |      | 50   |
|------------------------|-------|-------|-------|-------|-------|-------|------|------|------|-------|------|------|----------|------|------|------|------|------|------|
| Number of Circuits     | 5     | 13    | 19    | 1     | 3     | 4     | 7    | 8    | 1    | 2     | 6    | 5    | 6        | 7    | 1    | 2    | 2    | 5    | 1    |
| Insert Configuration   | 12S-5 | 18-13 | 20-19 | 12S-1 | 16S-3 | 18M-4 | 16-7 | 24-8 | 16-1 | 16S-2 | 24-6 | 28-5 | 32-6     | 24-7 | 18-1 | 24-2 | 32-2 | 36-5 | 22-1 |
| Shell Size             | 12S   | 18    | 20    | 12S   | 16S   | 18    | 16   | 24   | 16   | 16S   | 24   | 28   | 32       | 24   | 18   | 24   | 32   | 36   | 22   |
| Maximum Current Rating | 4     | 4     | 4     | 6.5   | 6.5   | 6.5   | 6.5  | 6.5  | 16.5 | 6.5   | 10   | 16.5 | 6.5 / 85 | 10   | 10   | 16.5 | 26   | 26   | 10   |

Figure Number

## Assembly Part Numbers

|   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 16001 | 16011 | 16171 | 16021 | 16031 | 16041 | 16051 | 16061 | 16071 | 16081 | 16131 | 16091 | 16181 | 16161 | 16101 | 16111 | 16141 | 16151 | 16121 |
| 2 | 16002 | 16012 | 16172 | 16022 | 16032 | 16042 | 16052 | 16062 | 16072 | 16082 | 16132 | 16092 | 16182 | 16162 | 16102 | 16112 | 16142 | 16152 | 16122 |
| 3 | 16003 | 16013 | 16173 | 16023 | 16033 | 16043 | 16053 | 16063 | 16073 | 16083 | 16133 | 16093 | 16183 | 16163 | 16103 | 16113 | 16143 | 16153 | 16123 |
| 4 | 16004 | 16014 | 16174 | 16024 | 16034 | 16044 | 16054 | 16064 | 16074 | 16084 | 16134 | 16094 | 16184 | 16164 | 16104 | 16114 | 16144 | 16154 | 16124 |
| 5 | 16005 | 16015 | 16175 | 16025 | 16035 | 16045 | 16055 | 16065 | 16075 | 16085 | 16135 | 16095 | 16185 | 16165 | 16105 | 16115 | 16145 | 16155 | 16125 |
| 6 | 16006 | 16016 | 16176 | 16026 | 16036 | 16046 | 16056 | 16066 | 16076 | 16086 | 16136 | 16096 | 16186 | 16166 | 16106 | 16116 | 16146 | 16156 | 16126 |
| 7 | 16007 | 16017 | 16177 | 16027 | 16037 | 16047 | 16057 | 16067 | 16077 | 16087 | 16137 | 16097 | 16187 | 16167 | 16107 | 16117 | 16147 | 16157 | 16127 |
| 8 | 16008 | 16018 | 16178 | 16028 | 16038 | 16048 | 16058 | 16068 | 16078 | 16088 | 16138 | 16098 | 16188 | 16168 | 16108 | 16118 | 16148 | 16158 | 16128 |



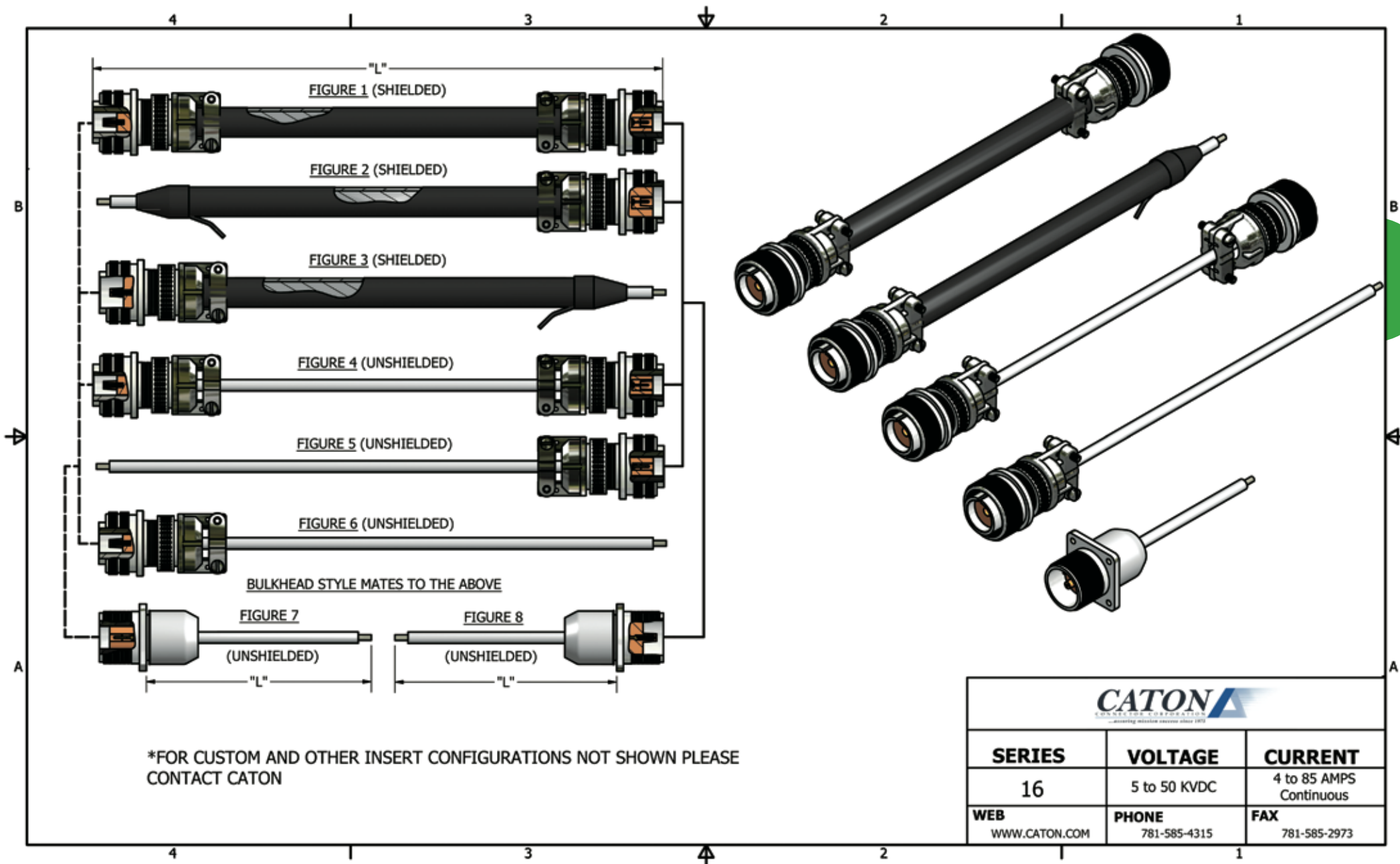
| SERIES               | VOLTAGE               | CURRENT                    |
|----------------------|-----------------------|----------------------------|
| 16                   | 5 to 50 KVDC          | 4 to 85 AMPS<br>Continuous |
| WEB<br>WWW.CATON.COM | PHONE<br>781-585-4315 | FAX<br>781-585-2973        |

4

3

2

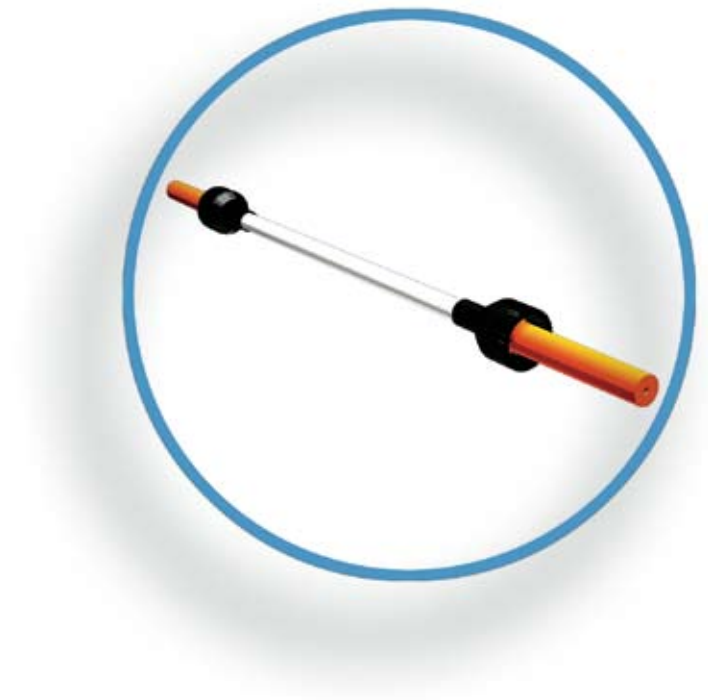
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## 17 Series

### 10-40 kVDC LGG TYPE ASSEMBLIES

The 17 series is offered in 3 voltage ranges. These assemblies feature a single conductor and are designed for high voltage applications where a “steady state” voltage is required. The cable assembly consists of a silicone rubber tapered conical interface, which is molded directly onto the wire to insure a high dielectric strength and maximum performance. The cable assemblies are offered with shielded or unshielded cable. The low profile mating receptacles are offered in several mounting styles and utilize Diallyl Phthalate as an insulator.





## TECHNICAL FEATURES

- Reliable and cost effective
- Quick connect & disconnect
- Voltage Ratings of 10-40 kVDC
- Amperage ranges from 6.5-10A
- Exclusive Caton Tapered Conical Interface

## TYPICAL APPLICATIONS

- Power Supplies
- Laser Equipment
- Satellite NAV systems
- Land and Airborne Radar Systems
- Medical Scanning Equipment



## GENERAL SPECIFICATIONS

### 1.0 Electrical

- 1.1 Operating Voltage: 15-40 kVDC
- 1.2 Current Range: 6.5-10 AMPS
- 1.3. Corona Resistant: Tapered Interfacial Seals

### 2.0 Mechanical

- 2.1 Style: Bulkhead and In-Line Screw Coupling
- 2.2 Plug Termination: Resilient Silicone Plugs Molded Directly to the Cable

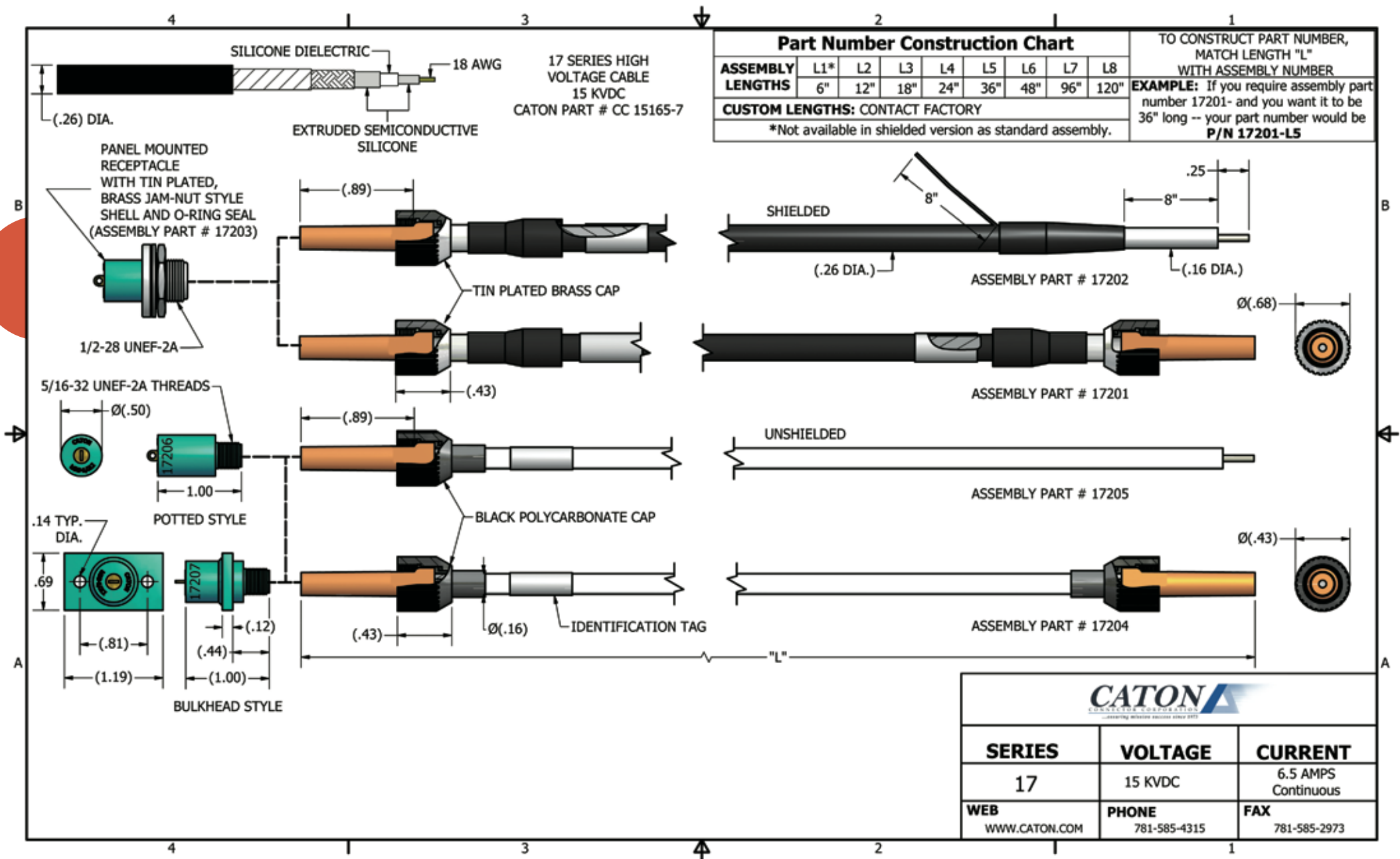
### 3.0 Environmental

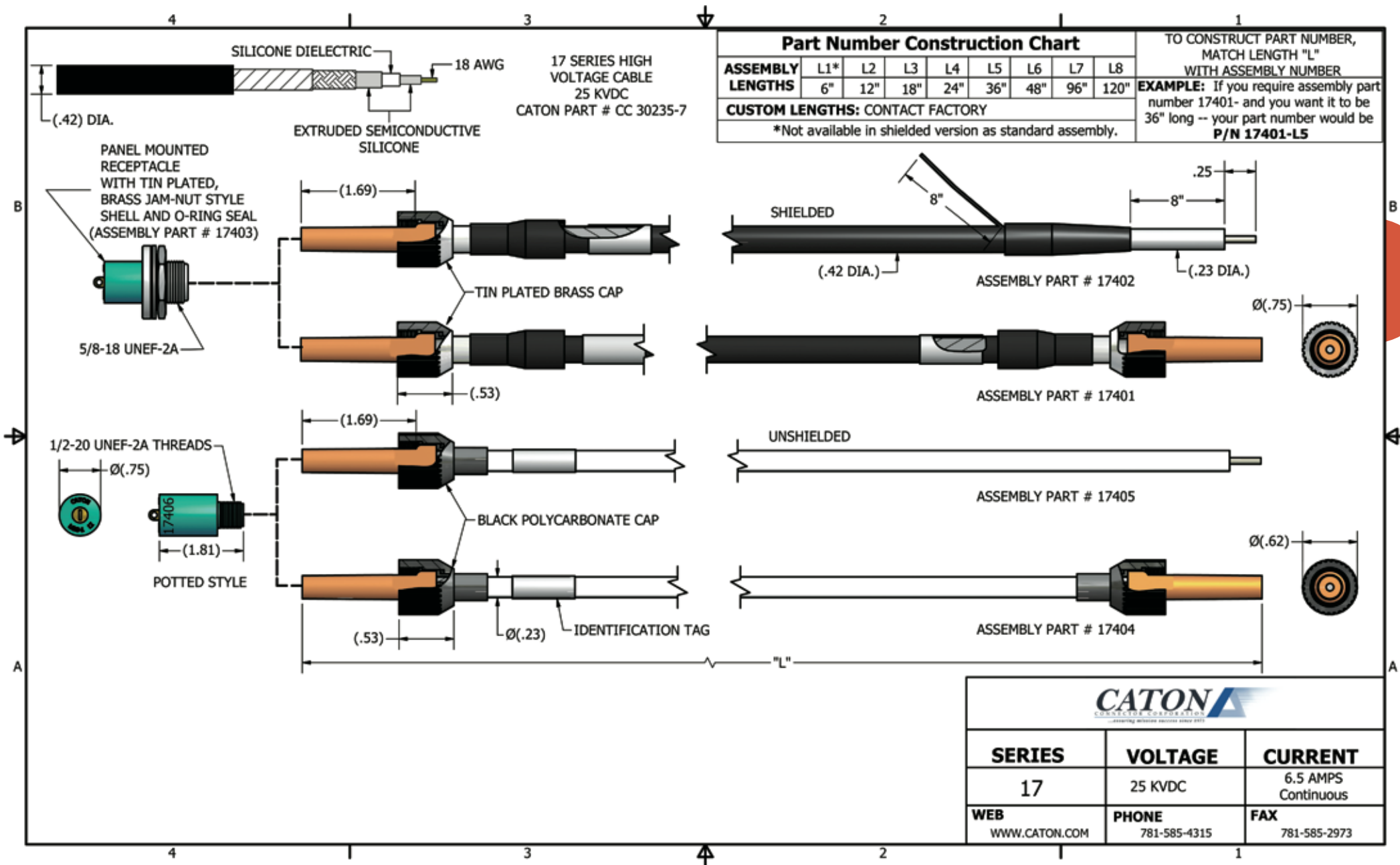
- 3.1 Altitude: Sea Level to 70,000 feet \*
- 3.2 Operating Temperature Range: -55°C to +125°C

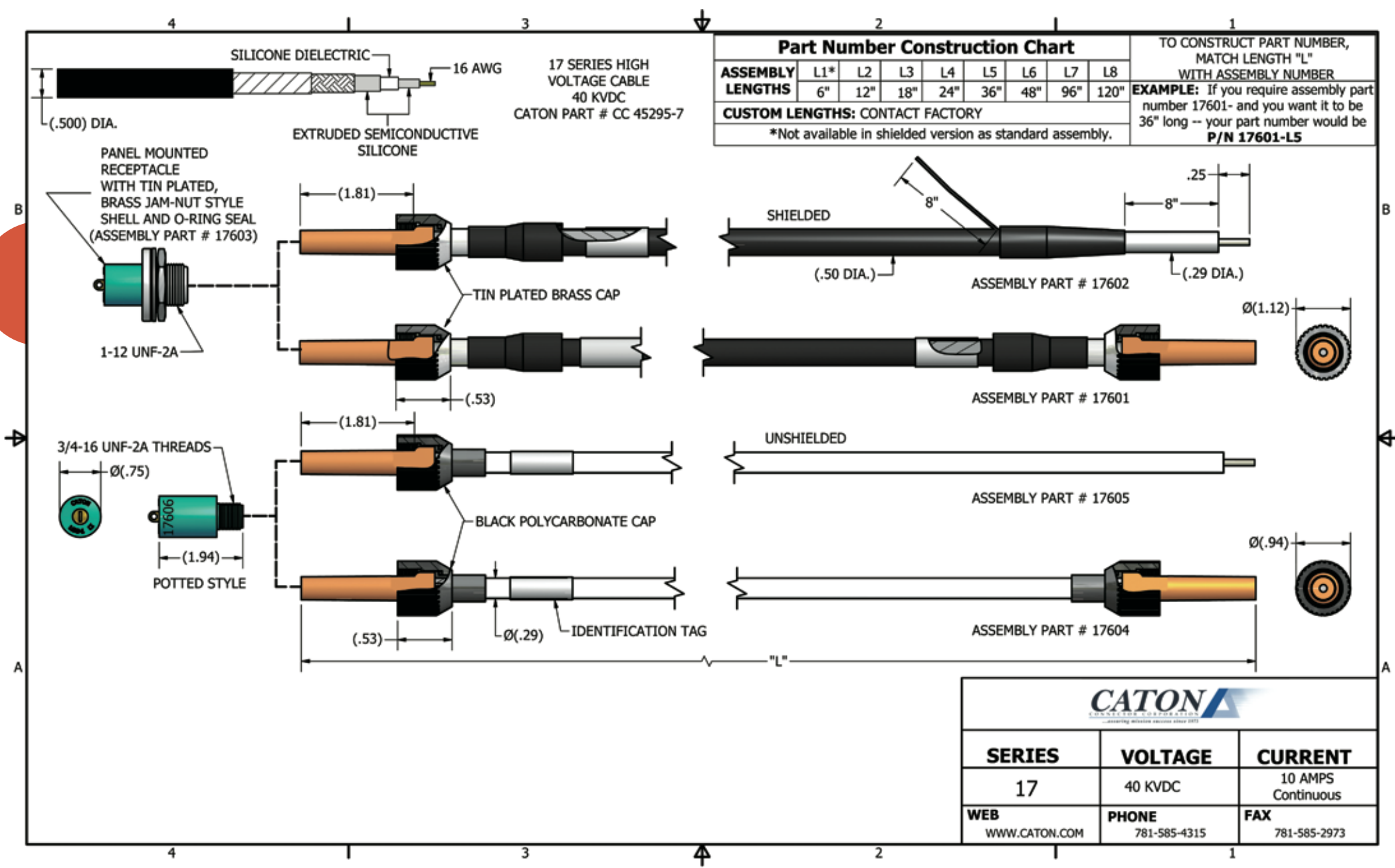
### 4.0 Materials

- 4.1 Connector Body Plug: Silicone Rubber per A-A-59588 (ZZ-R-765), Class 2B, Color; Red, Durometer; 70 Shore A
- 4.2 Connector Body Receptacle: Thermoset Diallyl Phthalate Per ASTM D 5948-96 (MIL-M-14), Color; Green
- 4.3 Unshielded Assemblies:
  - 4.3.1 Coupling Rings and Ferrules: Polycarbonate Per ASTM-D3935 (L-P-393)
- 4.4 Shielded Assemblies:
  - 4.4.1 Coupling Rings and Ferrules: Hard Brass Per QQ-B-626, Tin Plated Per ASTM B 545 (MIL-T-10727)
- 4.5 Jam Nut Receptacles: Hard Brass Per QQ-B-626, Tin Plated Per ASTM B 545 (MIL-T-10727)
- 4.6 Cable: Tin or Silver Plated Copper, Silicone Insulation
- 4.7 Cable Shielding: Braided Tinned Copper Per A-A-59569 (QQ-B-575)
- 4.8. Cable Jacket (Shielded Assemblies Only): Silicone Rubber Per A-A-59588 (ZZ-R-765), Class 2B, Color Black

\* Rated altitude values vary by assembly. Contact Caton for assembly specific values.







| Part Number Construction Chart                           |     |     |     |     |     |     |     |      |
|----------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|------|
| ASSEMBLY LENGTHS                                         | L1* | L2  | L3  | L4  | L5  | L6  | L7  | L8   |
|                                                          | 6"  | 12" | 18" | 24" | 36" | 48" | 96" | 120" |
| CUSTOM LENGTHS: CONTACT FACTORY                          |     |     |     |     |     |     |     |      |
| *Not available in shielded version as standard assembly. |     |     |     |     |     |     |     |      |

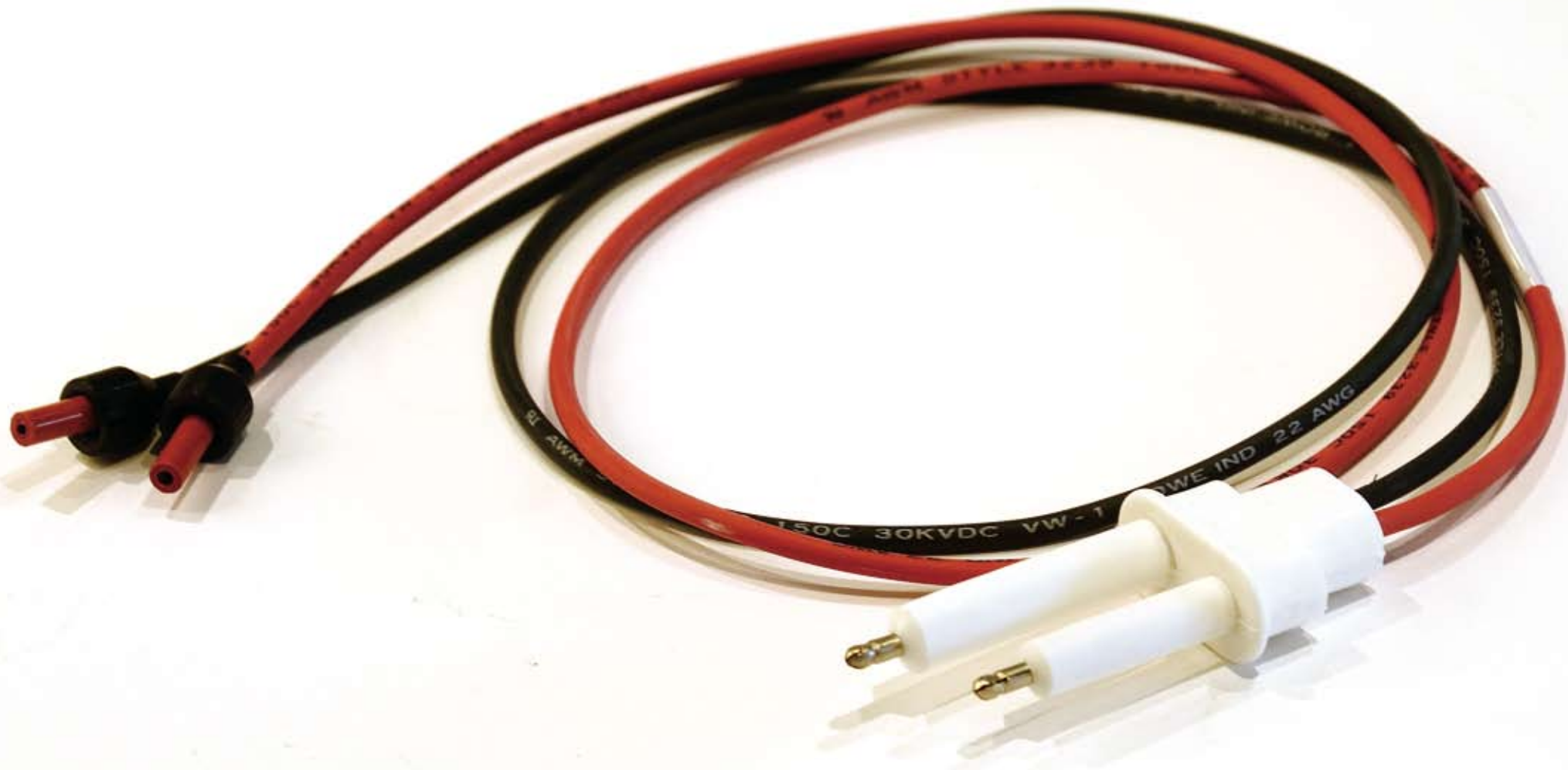
TO CONSTRUCT PART NUMBER, MATCH LENGTH "L" WITH ASSEMBLY NUMBER

**EXAMPLE:** If you require assembly part number 17601- and you want it to be 36" long -- your part number would be **P/N 17601-L5**

| <b>CATON</b><br>CONSOLIDATOR CORPORATION<br><small>...ensuring mission success since 1973</small> |              |                    |
|---------------------------------------------------------------------------------------------------|--------------|--------------------|
| SERIES                                                                                            | VOLTAGE      | CURRENT            |
| 17                                                                                                | 40 KVDC      | 10 AMPS Continuous |
| WEB                                                                                               | PHONE        | FAX                |
| WWW.CATON.COM                                                                                     | 781-585-4315 | 781-585-2973       |

## Custom 17 Series Design

10 kVDC, 2.5 Amps



## 19 Series

### 60 kVDC CORONA-FREE CABLE ASSEMBLIES

The 19 Series is our foremost, standard, assembly designed for high pulse applications where Corona-Free high voltage and high reliability are required. All standard assemblies utilize Caton's proven silicone rubber tapered interface. Our low profile receptacles commonly use silicone inserts as an insulator. In oil to air applications, Diallyl Phthalate is used as a dielectric because of its exceptional resistance to most common insulation oils.





## GENERAL SPECIFICATIONS

### 1.0 Electrical

- 1.1 Operating Voltage: 60 kVDC, 20 kVRMS
- 1.2 Current: 26 AMPS
- 1.3 Corona Resistant: Tapered Interfacial Seal

### 2.0 Mechanical

- 2.1 Style: Bulkhead and Inline Screw Coupling
- 2.2 Termination: Resilient Silicone Rubber Insulator  
Molded Directly to the Cable

### 3.0 Environmental

- 3.1 Altitude: Sea Level to 70,000 feet
- 3.2 Operating Temperature Range: -55°C to +125°C

### 4.0 Materials

- 4.1 Connector Body Plug: Silicone Rubber per A-A-59588 (ZZ-R-765), Class 2B, Color; Red, Durometer; 70 Shore A
- 4.2 Connector Body Receptacle: Thermoset Diallyl Phthalate Per ASTM D 5948-96 (MIL-M-14), Color; Green
- 4.3 Cable: Silver Plated Copper, Triple Extruded Silicone Insulation
- 4.4 Cable Shielding: Braided Tinned Copper Per A-A-59569 (QQ-B-575)
- 4.5. Cable Jacket (Shielded Assemblies Only): Silicone Rubber Per A-A-59588 (ZZ-R-765), Class 2B, Color Black

## TECHNICAL FEATURES

- Corona Free Operation
- High Pulse Applications
- High Temperature
- High Altitude Applications
- Operating Voltage to 60 kVDC
- Exclusive Caton Tapered Conical Interface

## TYPICAL APPLICATIONS

- Power Supplies
- Ground Radar Installations
- Shipboard Power Systems
- Electron Microscopes & Accelerators
- Electron Beam Scanning Equipment

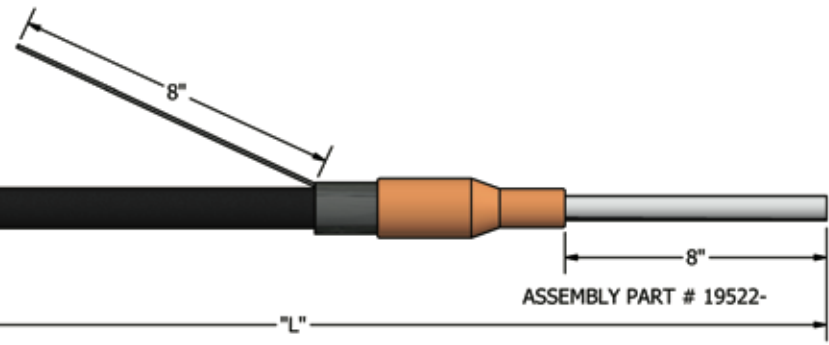
4 | 3 | 2 | 1

19 SERIES  
HIGH VOLTAGE CABLE  
PART # 3CC30982

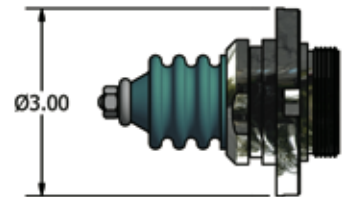
| PART NUMBER CONSTRUCTION CHART  |     |     |     |     |     |     |     | TO CONSTRUCT A PART NUMBER,<br>MATCH THE LENGTH "L" WITH AN<br>ASSEMBLY NUMBER                                           |
|---------------------------------|-----|-----|-----|-----|-----|-----|-----|--------------------------------------------------------------------------------------------------------------------------|
| ASSEMBLY<br>LENGTHS             | L1  | L2  | L3  | L4  | L5  | L6  | L7  |                                                                                                                          |
|                                 | N/A | N/A | N/A | 24" | 36" | 48" | 96" |                                                                                                                          |
| CUSTOM LENGTHS: CONTACT FACTORY |     |     |     |     |     |     |     | <b>EXAMPLE:</b> If you require assembly part # 19521- and you want it to be 96" long, then your part # would be 19521-L7 |

1 3/4 DOUBLE STUB THREAD

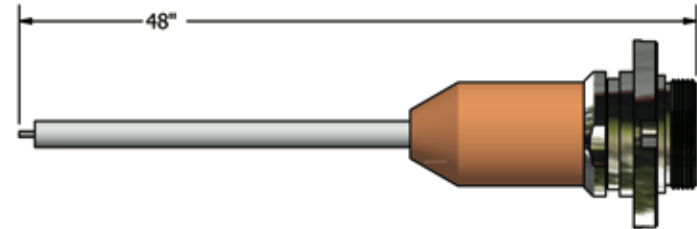
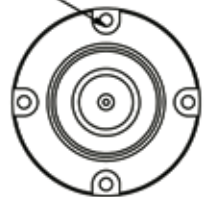
EXTRUDED SEMICONDUCTIVE SILICONE



Ø.201 THROUGH HOLES EQUALLY  
SPACED ON 2.625 BC



19511 RECEPTACLE  
FOR USE IN TRANSFORMER OIL



13194 RECEPTACLE  
FOR USE IN AIR

| SERIES               | VOLTAGE               | CURRENT             |
|----------------------|-----------------------|---------------------|
| 19                   | 60 KVDC               | 20 AMPS             |
| WEB<br>WWW.CATON.COM | PHONE<br>781-585-4315 | FAX<br>781-585-2973 |

4 | 3 | 2 | 1

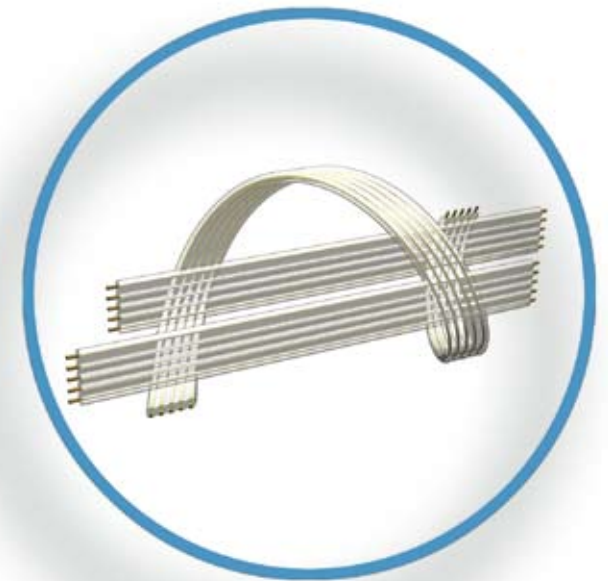
Custom 19 Series Design  
60 kVDC, 20 kVRMS, 26Amps

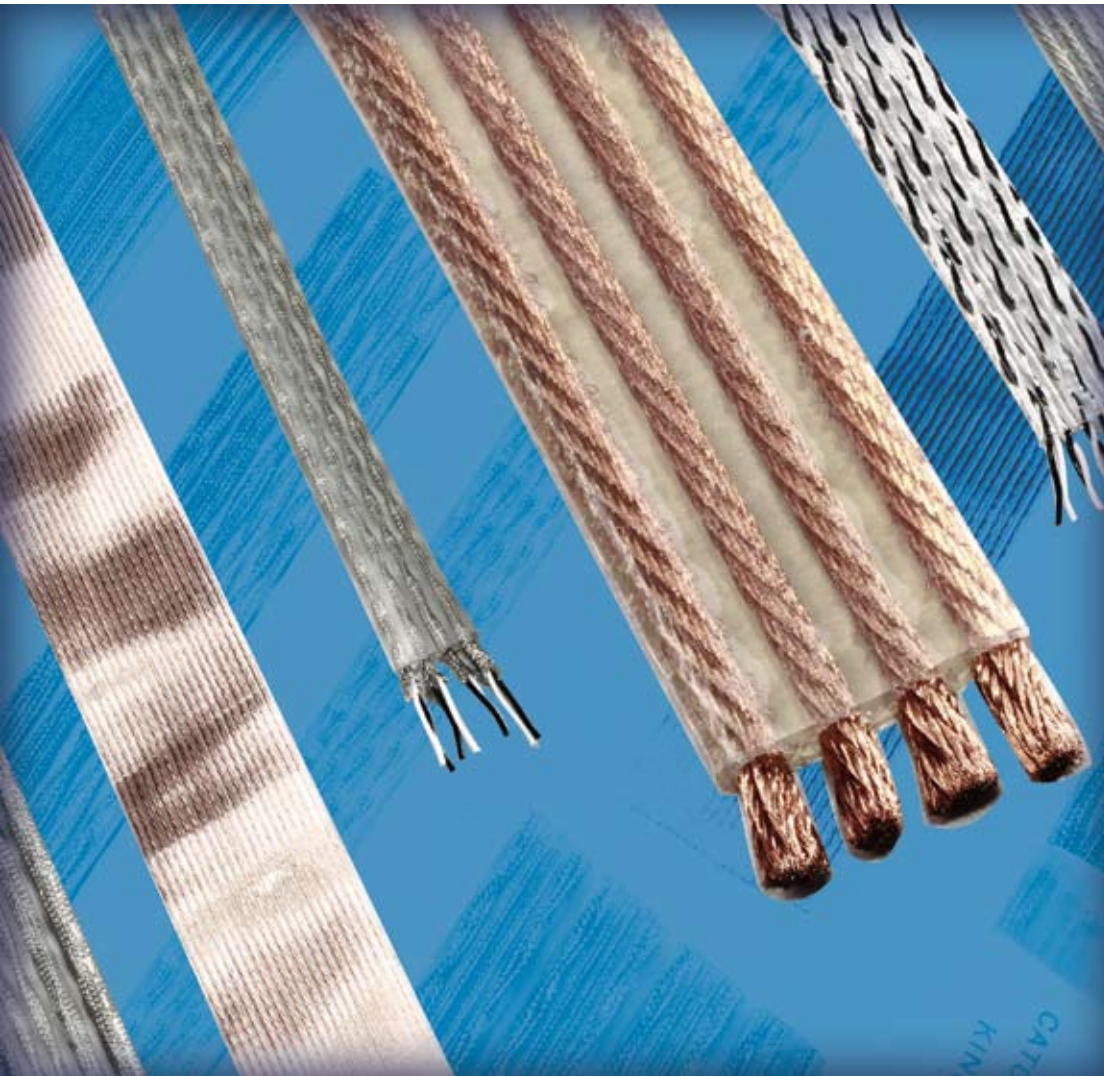


## Flat Flexible Cable

100V-80 kVDC SILICONE MULTI-CONDUCTOR CABLE

Caton's line of Hi-Flex Shielded and Unshielded Cables provides the advantages of all Caton flexible silicone cables in a standard, low-cost package. Ultra-flexible, finely stranded wire conductors are used for maximum flexibility and long life in dynamic flexing applications. The exclusive extrusion process encapsulates the wire conductors in crystal clear, flexible, yet extremely durable silicone insulation, making it ideal in diverse applications, including aerospace, festoon systems, food & beverage, forestry, industrial automation, medical, packaging, printing, pulp & paper, and semiconductor manufacturing.





## TECHNICAL FEATURES

- |                                         |                                      |
|-----------------------------------------|--------------------------------------|
| Extremely Flexible                      | Life expectancy of 10,000,000 Cycles |
| Extreme environment resistance          | RoHS Compliant                       |
| Low Voltage, High Voltage, RF, Fiber    | UL Recognized – File #E324413, CE    |
| Up to 12 conductors                     | Fire resistant                       |
| Conductors are encapsulated in silicone |                                      |

## GENERAL SPECIFICATIONS

### 1.0 Electrical

- |                            |                           |
|----------------------------|---------------------------|
| 1.1 Insulation Resistance: | 200meg $\Omega$ @ 500Vdc  |
| 1.2 Dielectric Strength:   | 450 Volts/mil (17.7kV/mm) |
| 1.3 Dielectric Constant:   | 2.8 (nominal)             |

### 2.0 Environmental

- |                              |                           |
|------------------------------|---------------------------|
| 2.1 Temperature Rating:      | -65°C to 260°C            |
| 2.2 Moisture Rating:         | Submersible               |
| 2.3 Vacuum Rating:           | 5 x 10 <sup>-5</sup> torr |
| 2.4 Outgassing:              | 0.24 %TML, 0.02 %CVM      |
| 2.5 Radiation:               | 107 Roentgens (exposure)  |
| 2.6 Acid resistance:         | Good                      |
| 2.7 Oil Resistance:          | Good                      |
| 2.8 Ozone Resistance:        | Outstanding               |
| 2.9 Flame Resistance:        | Good                      |
| 2.10 Water/Steam Resistance: | Excellent                 |
| 2.11 Alcohol Resistance:     | Good                      |
| 2.12 Toxins:                 | Halogen-Free              |

### 3.0 Mechanical

- |                                    |                     |
|------------------------------------|---------------------|
| 3.1 Life Expectancy:               | 10,000,000 cycles   |
| 3.2 Minimum Bend Radius (Flexing): | 10x Cable thickness |
| 3.3 Durometer Rating:              | Shore A, 65         |
| 3.4 Tensile Strength:              | 6.5 Mpa (psi)       |
| 3.5 Tear Strength:                 | 18 kN/m             |

## TYPICAL APPLICATIONS

- |                             |                          |
|-----------------------------|--------------------------|
| Aerospace                   | Robotics                 |
| Ship Board and Ground radar | Medical Equipment        |
| Laser Equipment             | Remote Operated Vehicles |
| Satellite Systems           |                          |

# High Voltage Flexible Flat Wire

| Voltage (kVDC) | Number of Conductors | AWG | Current Rating (Amps) | Cable Thickness (inches) | Cable Width (in) | Part Number  |
|----------------|----------------------|-----|-----------------------|--------------------------|------------------|--------------|
| 10             | 1                    | 30  | 3                     | 0.21 Diameter            | N/A              | 969M101-30-1 |
| 12             | 1                    | 26  | 6                     | 0.22 Diameter            | N/A              | 969M101-26-1 |
| 12             | 1                    | 28  | 5                     | .021 Diameter            | N/A              | 969M101-28-1 |
| 12             | 1                    | 24  | 7                     | 0.22 Diameter            | N/A              | 969M101-24-1 |
| 31             | 1                    | 20  | 10                    | 0.24 Diameter            | N/A              | 969M101-20-1 |
| 31             | 1                    | 22  | 8                     | 0.23 Diameter            | N/A              | 969M101-22-1 |
| 42             | 1                    | 4   | 125                   | 0.50 Diameter            | N/A              | 969M101-4-1  |
| 42             | 1                    | 6   | 95                    | .044 Diameter            | N/A              | 969M101-6-1  |
| 42             | 1                    | 8   | 65                    | 0.39 Diameter            | N/A              | 969M101-8-1  |
| 42             | 1                    | 10  | 47                    | 0.33 Diameter            | N/A              | 969M101-10-1 |
| 42             | 1                    | 12  | 36                    | 0.30 Diameter            | N/A              | 969M101-12-1 |
| 42             | 1                    | 14  | 27                    | 0.28 Diameter            | N/A              | 969M101-14-1 |
| 42             | 1                    | 16  | 19                    | 0.26 Diameter            | N/A              | 969M101-16-1 |
| 42             | 1                    | 18  | 15                    | 0.25 Diameter            | N/A              | 969M101-18-1 |
| 12             | 2                    | 26  | 6                     | 0.09                     | 0.14             | 969M101-26-2 |
| 12             | 2                    | 28  | 5                     | 0.08                     | 0.13             | 969M101-28-2 |
| 18             | 2                    | 22  | 8                     | 0.11                     | 0.18             | 969M101-22-2 |
| 12             | 3                    | 28  | 5                     | 0.08                     | 0.18             | 969M101-28-3 |
| 18             | 3                    | 20  | 10                    | 0.12                     | 0.28             | 969M101-20-3 |
| 20             | 3                    | 16  | 19                    | 0.15                     | 0.37             | 969M101-16-3 |
| 20             | 3                    | 18  | 15                    | 0.14                     | 0.33             | 969M101-18-3 |
| 20             | 4                    | 16  | 19                    | 0.15                     | 0.48             | 969M101-16-4 |
| 20             | 4                    | 18  | 15                    | 0.14                     | 0.43             | 969M101-18-4 |
| 20             | 8                    | 16  | 19                    | 0.15                     | 0.92             | 969M101-16-8 |



## High Voltage Silicone Wire

## UL STYLE 3239 HIGH VOLTAGE SILICONE WIRE

These designs have earned the UL approval only after successfully meeting stringent performance and manufacturing acceptance criteria. The silicone dielectric maintains excellent flexibility over an extreme temperature range and is resistant against radiation, moisture, and weathering. Being compatible with most silicone encapsulation material has proven to make this wire an excellent choice for most high or low voltage terminations.



| Part Number | Operation Voltage | Conductor  |                       |                                  | O.D.In[mm]  | lbs./10001<br>apx. net |
|-------------|-------------------|------------|-----------------------|----------------------------------|-------------|------------------------|
|             | <i>kVdc</i>       | <i>AWG</i> | <i>Stranding (TC)</i> | <i>Dimensions<br/>Inches(mm)</i> |             |                        |
| 33163       | 15                | 20         | 19/32                 | 0.040[1.02]                      | 0.134[3.42] | 10.5                   |
| 36225       | 25                | 16         | 19/28                 | 0.058[1.47]                      | 0.181[4.60] | 21.2                   |
| 36220       | 25                | 14         | 41/30                 | 0.078[1.98]                      | 0.201[5.11] | 28.3                   |
| 36219       | 50                | 12         | 65/30                 | 0.101 [2.57]                     | 0.307[7.80] | 56.8                   |

*Note:*

- Standard dielectric color is white. Custom colors are available. Please contact Caton for details.
- Operating temperature range is -55 to +150°C



## DUAL EXTRUDED HIGH VOLTAGE SILICONE WIRE

When applications require extremely low loss of power and low electrical noise, i.e. partial discharge, a layer of semi-conductive silicone is extruded around the stranded center conductor thereby bringing air inside the stranding to zero electrical stress. Dual extruded wire is ideal for AC powered systems.

| Part Number | Operation Voltage |      | Conductor |           |         |                       | Semi-Conductive Layer in[mm] | O.D.In[mm]   | lbs./10001 apx. net |
|-------------|-------------------|------|-----------|-----------|---------|-----------------------|------------------------------|--------------|---------------------|
|             | kVac              | kVdc | AWG       | Stranding | Plating | Dimensions Inches(mm) |                              |              |                     |
| 005639      | 10                | 30   | 22        | 19/34     | Silver  | 0.032[0.81]           | 0.067[1.70]                  | 0.180[4.57]  | 12.4                |
| 0A2841      | 15                | 40   | 18        | 19/30     | Silver  | 0.051[1.30]           | 0.086[2.18]                  | 0.236[5.99]  | 27.6                |
| 002841      | 18                | 50   | 14        | 19/27     | Silver  | 0.071[1.80]           | 0.100[2.54]                  | 0.300[7.62]  | 47.1                |
| 005640      | 20                | 60   | 12        | 19/25     | Silver  | 0.092[2.34]           | 0.134[3.40]                  | 0.360[9.14]  | 68.3                |
| 005641      | 30                | 80   | 8         | 133/29    | Silver  | 0.150[3.81]           | 0.240[6.10]                  | 0.650[16.51] | 209.5               |

**Note:**

1. Standard dielectric color is white. Custom colors are available. Please contact Caton for details.
2. Operating temperature range is -55 to +150°C

## CONTACT US

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