

smiths connectors

# STANDARD COAXIAL CONNECTORS



Smiths Connectors' coaxial contacts provide flexibility in the design of high frequency RF and microwave applications. The contacts, including sizes 5, 8, 9, 12 and 16 and have the same outline dimensions as traditional power contacts that fit various insert arrangements for d-sub, circular, and rack and panel connectors. The coaxial cable type contacts are designed for low-loss concentric 50 and 75 Ohm cable types. These contacts are available in 50 Ohm for flexible RG-178 and RG-316 and semi rigid of SR.047 and SR. 080 cables. Flexible cables such as RG-179 for 75 Ohm applications are also available.

An innovative design of coax contacts opens a whole new world of design options. These small, rugged contacts have a VSWR rating of 1.3:1 max with a frequency range from DC to 5 GHz and fit standard connector contact cavities for MIL-DTL-38999, ARINC 404, and ARINC 600.

**FEATURES**

- ▶ Small size for high density packaging
- ▶ Ideal for RF and microwave applications for instruments, radar, communications, and RF shielding.

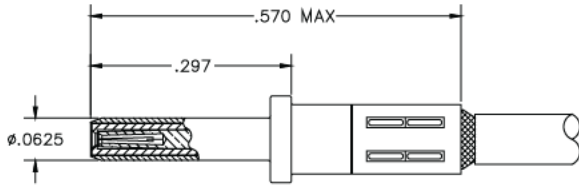
**INTERFACE DIMENSIONS**

- ▶ MIL-DTL-38999 ARINC 404 and ARINC 600 Per SAE-AS39029

| <b>MECHANICAL &amp; ENVIRONMENTAL SPECIFICATIONS</b> |   |
|--|---|
| Temperature Rating                                   | -65°C to +165°C   |
| Corrosion  | MIL-STD-202 Method 101, Test Condition B  |
| Shock  | MIL-STD-202 Method 213, Test Condition B  |
| Vibration  | MIL-STD-202 Method 204, Test Condition B  |
| Thermal Shock  | MIL-STD-202 Method 107, Test Condition B  |
| Durability   | 1000 mate/unmate cycles min.  |
| <b>ELECTRICAL SPECIFICATIONS</b>                     |   |
| Dielectric Withstanding Voltage                      | 500 VDC @ sea level with 70% relative humidity  |
| Insulation Resistance                                | 5000 mega-ohms min. @ 200 VDC   |
| Contact Current Rating                               | 2.0 Amps max.   |
| Characteristic Impedance                             | 50 Ohm constant airline impedance   |
| RH HI Potential Withstanding Voltage                 | 125 VRMS @ 5 MHz  |
| Corona Level @ 70,000 ft.                            | Center contact to intermediate contact: 125 VAC   |
| Permeability   | 2.0 max   |
| Frequency Range                                      | DC to 5 GHz   |
| VSWR   | 1.3:1 max. (mated pair)   |
| <b>MATERIAL &amp; FINISHES</b>                       |   |
| Center & Outer Spring Contacts                       | Brass per ASTM B16, alloy UNS C36000 or BeCu per ASTM-B196, alloy UNS C17200, C17300 Gold plate per MIL-DTL-45204, Type II, Class 1   |
| Shell  | Brass per ASTM B16, alloy UNS C36000 or BeCu per ASTM-B196, alloy UNS C17200, C17300 or Leaded Nickel Copper, alloy UNS C19500, C19600 Gold plate per MIL-DTL-45204, Type II, Class 1 |
| Hood   | 305 CRES per ASTM-A240, passivated per ASTM-A967  |
| Insulators   | PTFE per ASTM D-1710  |

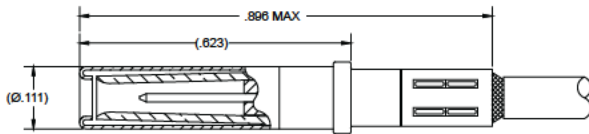
All specifications subject to change without notice.

## ▶ MIL-DTL-38999 SIZE 16 COAX PIN CONTACT



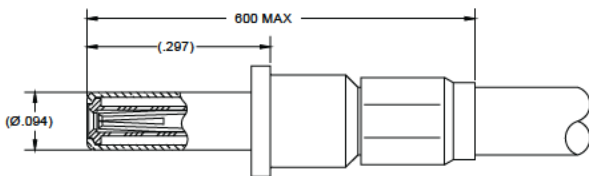
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018512-2100 | Flex ble Coax | RG-178 |
| 018512-2101 | Flex ble Coax | RG-316 |

## ▶ MIL-DTL-38999 SIZE 16 COAX SOCKET CONTACT



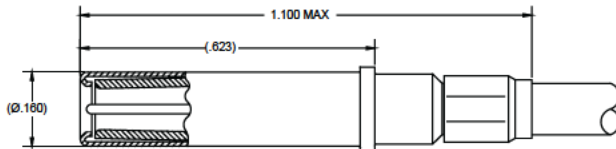
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018412-2100 | Flex ble Coax | RG-178 |
| 018412-2101 | Flex ble Coax | RG-316 |

## ▶ MIL-DTL-38999 SIZE 12 COAX PIN CONTACT



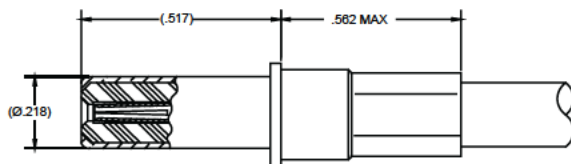
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018612-2118 | Flex ble Coax | RG-178 |
| 018612-2119 | Flex ble Coax | RG-316 |

## ▶ MIL-DTL-38999 SIZE 12 COAX SOCKET CONTACT



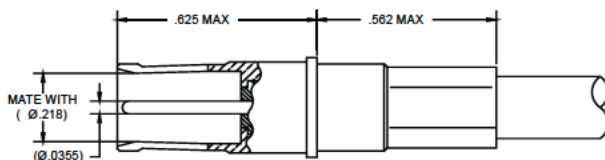
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018712-2118 | Flex ble Coax | RG-178 |
| 018712-2119 | Flex ble Coax | RG-316 |

## ▶ MIL-DTL-38999 SIZE 8 COAX PIN CONTACT



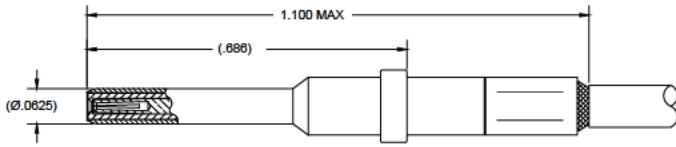
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 019612-2100 | Flex ble Coax | RG-58  |
| 019612-2101 | Flex ble Coax | RG-316 |

## ▶ MIL-DTL-38999 SIZE 8 COAX SOCKET CONTACT



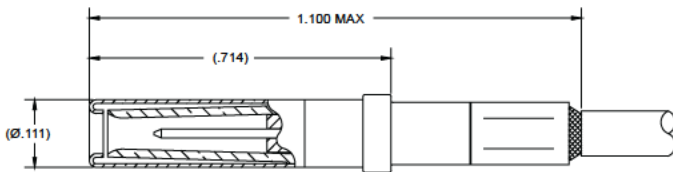
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 019512-2100 | Flex ble Coax | RG-58  |
| 019512-2101 | Flex ble Coax | RG-316 |

▶ ARINC 600 SIZE 16 COAX PIN



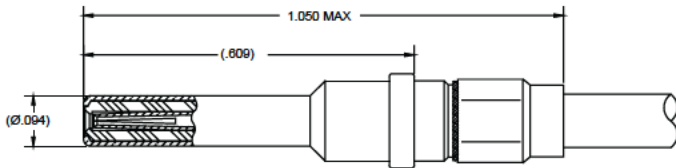
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018512-2200 | Flexible Coax | RG-178 |
| 018512-2201 | Flexible Coax | RG-316 |

▶ ARINC 600 SIZE 16 COAX SOCKET



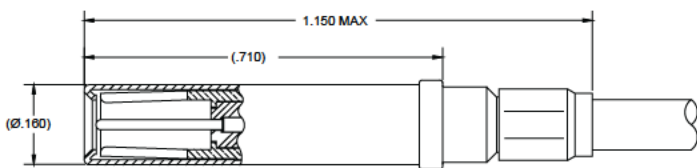
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018412-2200 | Flexible Coax | RG-178 |
| 018412-2201 | Flexible Coax | RG-316 |

▶ ARINC 600 SIZE 12 COAX PIN



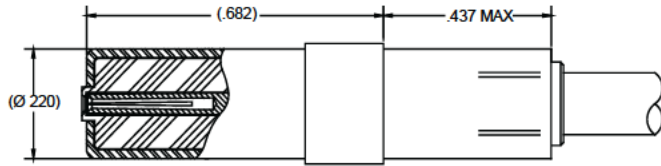
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018612-2200 | Flexible Coax | RG-178 |
| 018612-2201 | Flexible Coax | RG-316 |

▶ ARINC 600 SIZE 12 COAX SOCKET



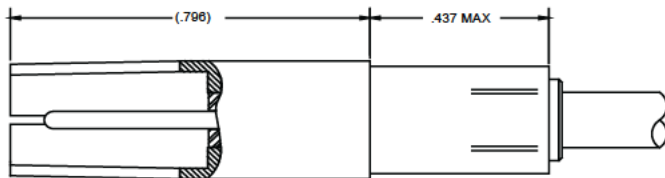
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 018712-2200 | Flexible Coax | RG-178 |
| 018712-2201 | Flexible Coax | RG-316 |

## ▶ ARINC 404/600 SIZE 5 COAX PIN



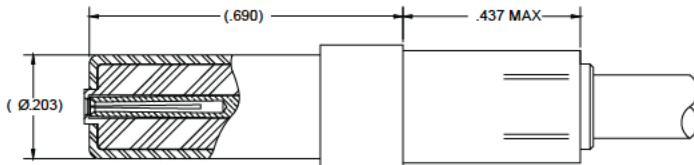
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 019412-2200 | Flexible Coax | RG-58  |
| 019412-2201 | Flexible Coax | RG-316 |

## ▶ ARINC 404/600 SIZE 5 COAX SOCKET



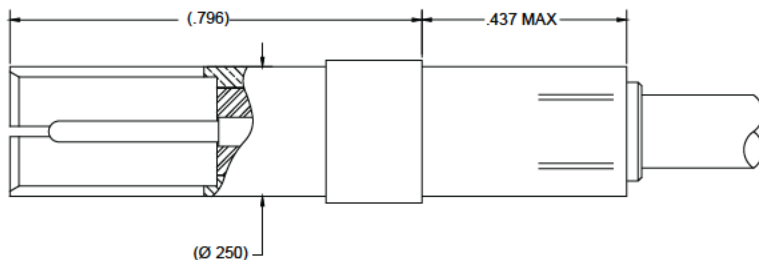
| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 019312-2200 | Flexible Coax | RG-178 |
| 019312-2201 | Flexible Coax | RG-316 |

## ▶ ARINC 404 SIZE 9 COAX PIN



| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 019212-2016 | Flexible Coax | RG-58  |
| 019212-2017 | Flexible Coax | RG-316 |

## ▶ ARINC 404 SIZE 9 COAX SOCKET



| PART NUMBER | CABLE TYPE    | CABLE  |
|-------------|---------------|--------|
| 019112-2016 | Flexible Coax | RG-58  |
| 019112-2017 | Flexible Coax | RG-316 |

# HOW TO ORDER



## 1 ▶ CONNECTOR #1

## 2 ▶ CABLE GROUP #

Semi-Rigid Coax

27 = SR.047

28 = SR.086

29 = .141.Flex

30 = .086 Flex

Flexible Coax

31 = RG-178

32 = RG-316

36 = RG-58

## 3 ▶ CONNECTOR #2 OL for Open Lead

## 4 ▶ CABLE LENGTH IN INCHES (XXX)



| SEMI-RIGID COAX CABLES |                   |                  |         |                 |
|------------------------|-------------------|------------------|---------|-----------------|
| CABLE GROUP            | CABLE DESIGNATION | IMPEDANCE (OHMS) | JACKET  | INNER CONDUCTOR |
| 27                     | SR.047            | 50               | 0.047"  | 0.0362"         |
| 28                     | SR.086            | 50               | 0.0865" | 0.0201"         |



| FLEXIBLE COAX CABLES |                   |                  |        |                 |
|----------------------|-------------------|------------------|--------|-----------------|
| CABLE GROUP          | CABLE DESIGNATION | IMPEDANCE (OHMS) | JACKET | INNER CONDUCTOR |
| 29                   | .141 Flex         | 50               | 0.160" | 0.036"          |
| 30                   | .086 Flex         | 50               | 0.104" | 0.020"          |
| 31                   | RG-178            | 50               | 0.071" | 0.012"          |
| 32                   | RG-316            | 50               | 0.098" | 0.0201"         |
| 33                   | RG-58             | 50               | 0.195" | 0.0355"         |



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