

RF COAXIAL CONNECTORS





COAXIAL CONNECTORS

INTRODUCTION

Sabritec offers a complete line of RF coaxial connectors, contacts and cable assemblies. The product line features our SCX, MDCX, SMP, SMPM, PCB Mount, MIL-DTL-38999, ARINC 404 and 600 and grounded circular connectors and contacts.

SCX Coaxial Connectors

The SCX connector series is the optimal ultraminiature RF solution for the designer.



SCX Coaxial

The product series offers the utmost savings in space utilization without compromising rugged mechanical performance and superior RF high frequency electrical performance. The SCX series features a .145" maximum overall diameter with a .375" overall length for the mated connector pair.

A revolutionary designed air dielectric interface is integrated into the SCX series resulting in exceptional RF performance with a 50-ohm characteristic impedance maintained throughout

the mated connector pair. The result is an extremely small and rugged high frequency RF connector series with exceptionally low VSWR (1.25:1) from DC to 20 GHz. This connector series is ideal for low profile board to board stacking arrangements.

MDCX Coaxial Connectors

Available with MDCX, multi-pin standard size 22 signal and Hypertac's® Hyperboloid coaxial contacts. Featuring low insertion/extraction forces, shock and vibration immunity, high current and voltage ratings, low electrical contact resistance, long life, and low rate of wear. These connectors are ideal for test, burn-in, and high power applications. The MDCX coaxial contacts have a constant 50 ohm airline impedance interface and are 30% smaller than Sabritec's standard SCX coax connectors.



SMP and SMPM Coaxial Connectors

Sabritec's SMP coax connectors feature a snap-in vibration proof connection. Frequency range is DC-40 GHz with low VSWR and insertion loss (dB) parameters of 0.10 dB max. Sabritec's SMPM line is 30% smaller than the SMP with frequency ranges capable of 60 GHz.



SMP Connectors

Precision PCB Terminators

Cable terminators are available for direct terminations of the cable to the PCB eliminating the need for pigtail configurations. Available for RG-178 and RG-316 cable type configurations.

Coaxial Contacts: MIL-DTL-38999, ARINC 404, ARINC 600

Complete line of coaxial contacts for MIL-DTL-38999, ARINC 404 and 600 connectors are available. These include size 5, 9, 12 and 16 contacts for various cable types and PC tail configurations.

Torque Isolation Connectors

The rear body of the coaxial connector is extended to alleviate stress against the cable to connector solder joint. The slotted extension straddles the semi-rigid cable confining it to its initial direction while increasing the mutual solder surfaces between the cable and connector body.

SCX CONNECTORS

PG. 159

MDCX CONNECTORS

PG. 165

SMP CONNECTORS

PG. 183

SMPM CONNECTORS

PG. 187

MIL-DTL-38999

CONTACTS PG. 191

ARINC 600 CONTACTS

PG. 194

ARINC 404 CONTACTS

PG. 194

SEMI-RIGID COAX

TORQUE ASSIST PG. 196

CABLE ASSEMBLY ORDERING

PG. 197

GROUND PLANE

CONNECTORS PG. 198

HYPERTRONICS/FLORIDA RF

LABS PG. 201



Torque Isolation Connector

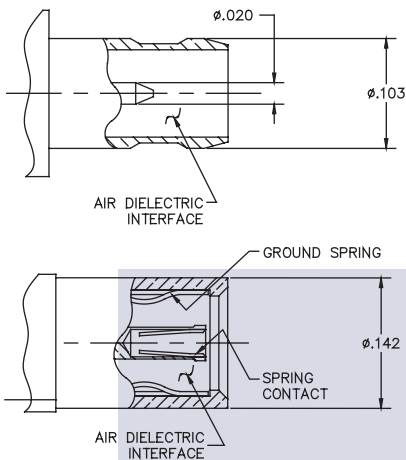
Grounded Circular Connectors

Designed to ground the outer shield of the coax contact directly to the shell of the connector. Available connector types include MIL-DTL-38999 Series I, II, and III, MIL-C-26482 Series II/MIL-DTL-83723 Series I square flange mount receptacles and plug connector assemblies.

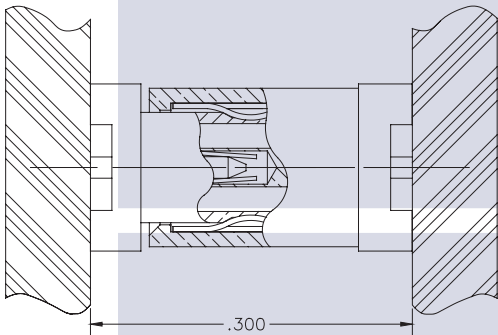
Sabritec does not offer standard OPL slash sheet part #'s for multipin circular and rack & panel connectors. Our connectors are fully intermateable with all slash sheet part #'s.



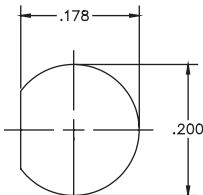
SCX INTERFACE DIMENSIONS



Mated Pair Length



Mounting D-Hole Bulkhead Connectors



ELECTRICAL SPECIFICATIONS:

Dielectric Withstanding Voltage	500 VRMS @ sea level with 70% relative humidity
Insulation Resistance	1000 megaohms min. @ 250 VDC
Contact Current Rating	1.5 Amps, D.C. max
Characteristic Impedance	50 Ohm constant airline impedance
RF 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 20 GHz
VSWR	1.25:1 max. (mated pair)

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS:

Temperature Rating	-65° 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
Mating/Unmate Force	1 lb. min
Float Mount Constraints	.010" full radial & .015 axial misalignment max

MATERIALS & FINISHES:

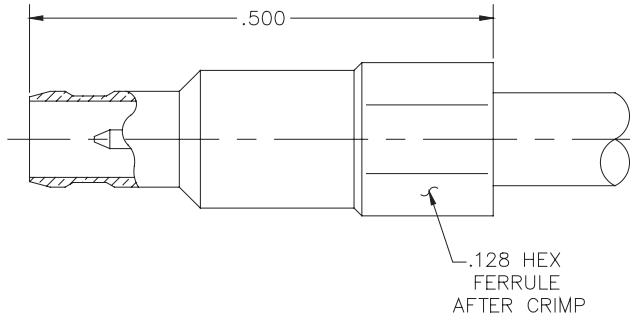
Center Contacts	Brass per ASTM B16, gold plated per ASTM B488, Type 3 Class 1.25
Spring Fingers	Beryllium copper per ASTM B196, gold plated per ASTM B488, Type 3 Class 1.25
Plug Body & Receptacle	Brass per ASTM B16, gold plated per ASTM B488, Type 3 Class 1.25
Insulators	PTFE per ASTM D-1710

All specifications subject to change without notice.



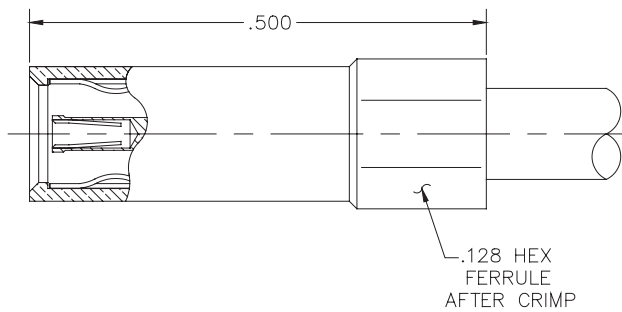


SCX Cable Plug



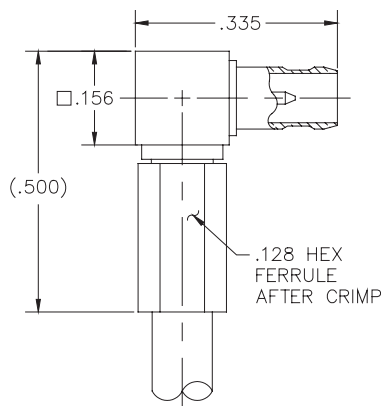
Part Number	Cable Type	Cable
013220-2000	Flexible Coax	RG-316
013220-2001	Flexible Coax	RG-178
013220-2002	Semi-Rigid Coax	RG-405

SCX Cable Receptacle



Part Number	Cable Type	Cable
013120-2000	Flexible Coax	RG-316
013120-2001	Flexible Coax	RG-178
013120-2002	Semi-Rigid Coax	RG-405

SCX Right Angle Plug



Part Number	Cable Type	Cable
013220-1008	Flexible Coax	RG-316
013220-1009	Flexible Coax	RG-178
013220-1010	Semi-Rigid Coax	RG-405

See Page 197 for Cable Ordering Information

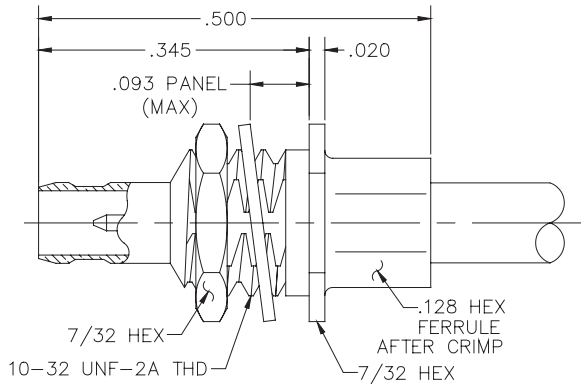




SCX BULKHEAD CONNECTORS

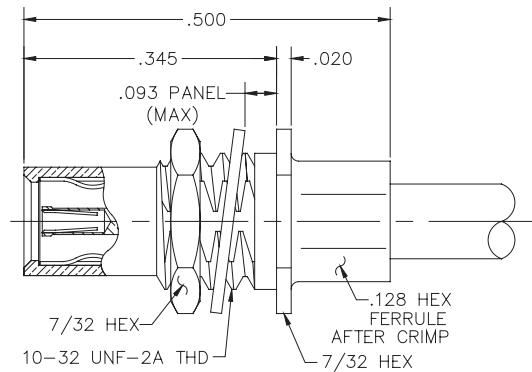
CABLE TYPE CONNECTORS

SCX Bulkhead Mount Cable Plug



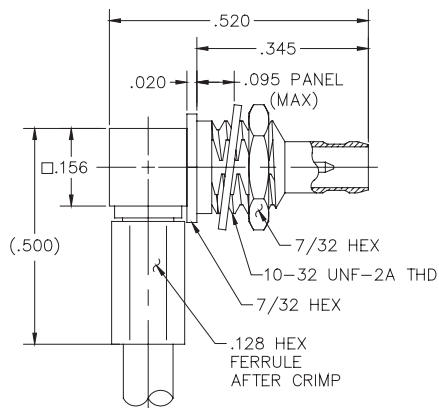
Part Number	Cable Type	Cable
013220-5011	Flexible Coax	RG-316
013220-5012	Flexibly Coax	RG-178
013220-5013	Semi-Rigid Coax	RG-405

SCX Bulkhead Mount Cable Receptacle



Part Number	Cable Type	Cable
013120-5011	Flexible Coax	RG-316
013120-5012	Flexible Coax	RG-178
013120-5013	Semi-Rigid Coax	RG-405

SCX Right Angle Bulkhead Mount Cable Plug



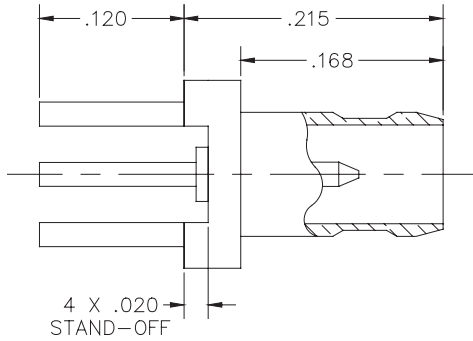
Part Number	Cable Type	Cable
013212-1011	Flexible Coax	RG-316
013212-1012	Flexible Coax	RG-178
013212-1013	Semi-Rigid Coax	RG-405

See Page 197 for Cable Ordering Information



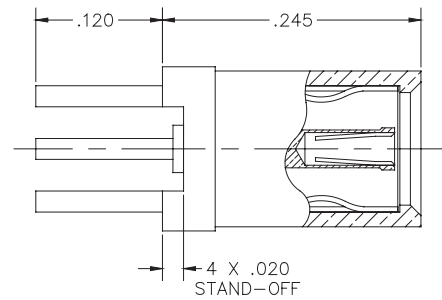


Straight PCB Plug



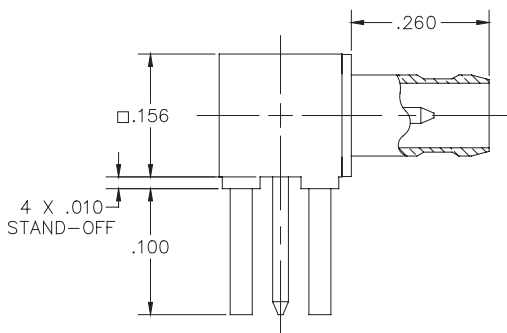
P/N 013200-2024

Straight PCB Receptacle



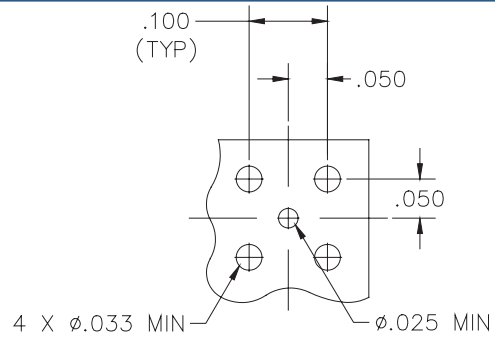
P/N 013100-2024

Right Angle PCB Plug



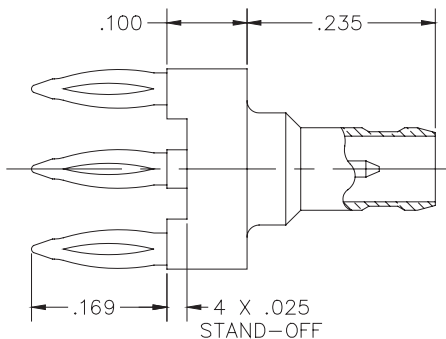
P/N 013200-1002

PCB Mounting Dimension



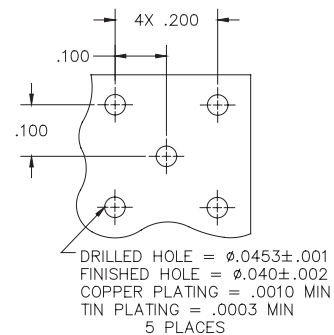
PCB Pattern for .100 Centers

Compliant Pin PCB Plug



P/N 013200-2029

Compliant Pin PCB Mounting Dimension

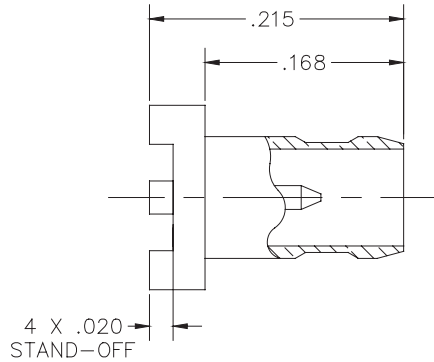


PCB Pattern for .200 Centers



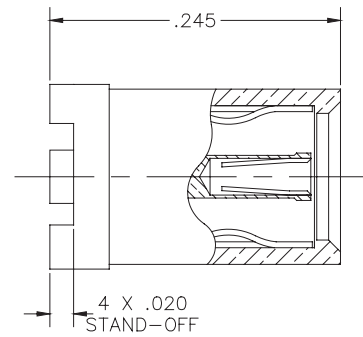


Surface Mount Plug



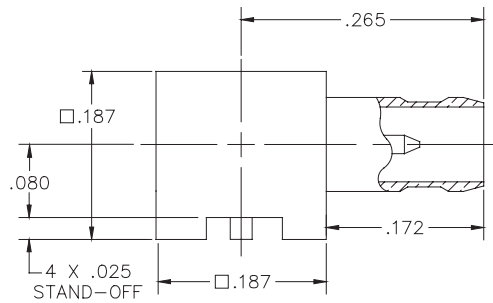
P/N 013200-2023

Surface Mount Receptacle



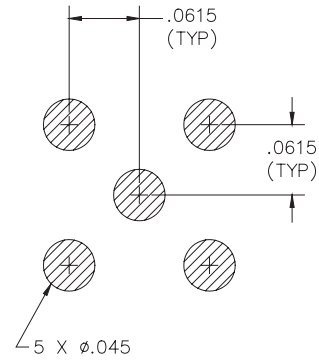
P/N 013100-2023

Right Angle Surface Mount Plug

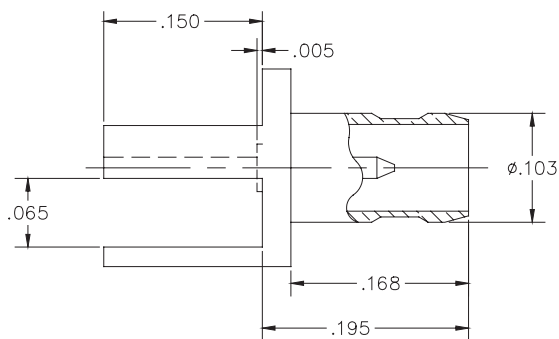


P/N 013200-1003

Surface Mount PCB Layout

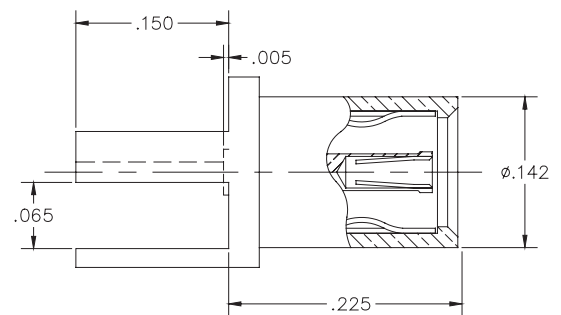


End Launch Surface Mount Plug

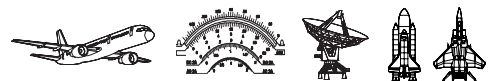


P/N 013200-2030

End Launch Surface Mount Receptacle



P/N 013100-2030

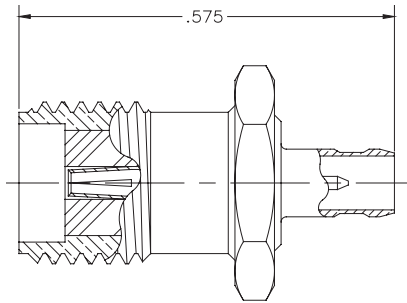




ADAPTERS / BLIND MATE CONNECTORS

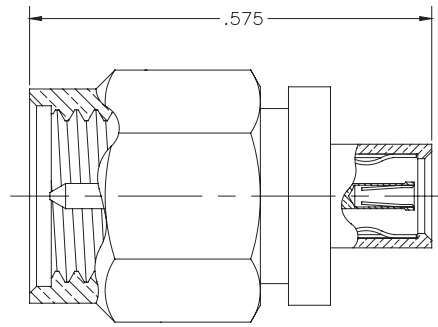
BETWEEN SERIES ADAPTERS

Coax Plug to SMA Jack Adapter



P/N 013200-4010

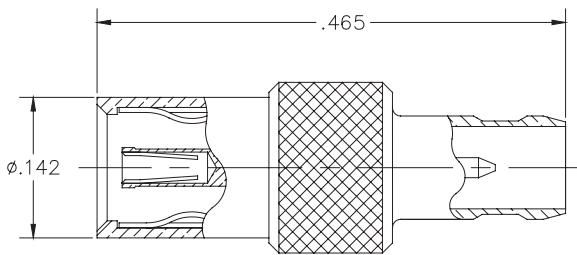
Coax Receptacle to SMA Plug Adapter



P/N 013100-4010

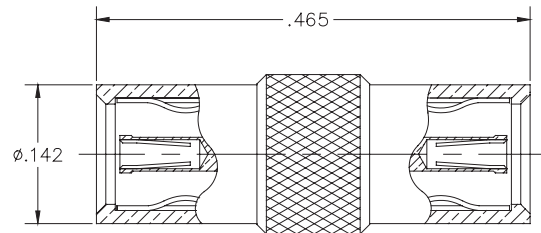
IN-SERIES SCX ADAPTERS

Plug to Receptacle Adapter



P/N 013100-4011

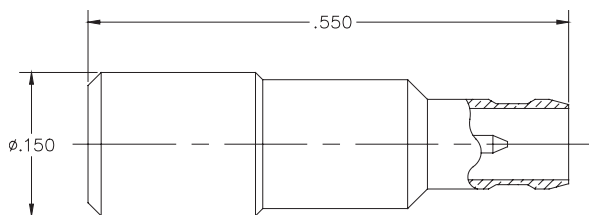
Receptacle to Receptacle Adapter



P/N 013200-4011

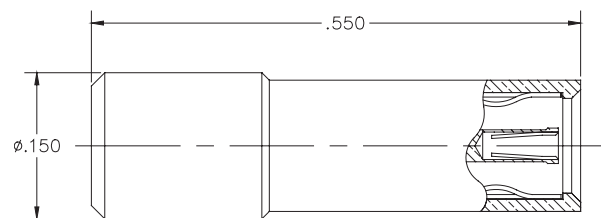
50-OHM LOAD TERMINATORS

50-Ohm Load Termination Plug



P/N 013200-2028

50-Ohm Load Termination Receptacle



P/N 013100-2028

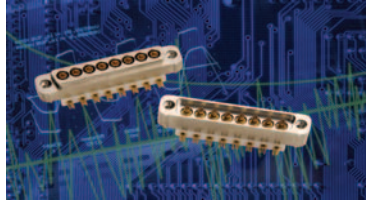




MDCX COAXIAL CONNECTORS

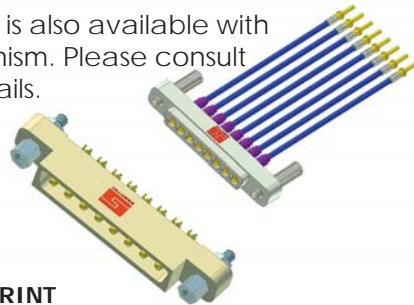
CONNECTOR SPECIFICATIONS

Sabritec's MDCX multipin coax connectors have a low VSWR of 1.25:1 up to 20 GHz (max mated pair). Each coax contact has a maximum overall diameter of 0.125" fitted into a low-profile metallized housing. Insert arrangements are available in 4, 6, 8, 10 and 12 way coaxial assemblies with mixed signal and power contacts available in hybrid layouts.

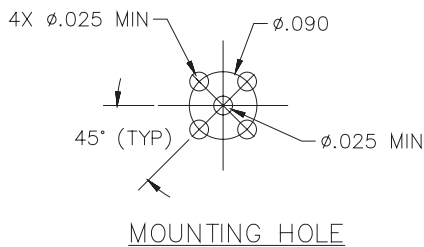


Signal contacts are available in standard mil-spec type size 22 signal contacts and Hyperboloid® coaxial contacts. Hyperboloid® contacts have low insertion/extraction forces, shock and vibration immunity, high current and voltage ratings, low electrical contact resistance, long life, and low rate of wear. These signal contacts offer contact resistance from .04 to 8 milliohm. These connectors are ideal for test, burn-in, and high power applications.

Sabritec's MDCX line is also available with locking post mechanism. Please consult factory for more details.



MDCX PCB FOOTPRINT



ELECTRICAL SPECIFICATIONS:

Dielectric Withstanding Voltage	500 VRMS @ sea level with 70% relative humidity
Insulation Resistance	1000 megaohms min. @ 250 VDC
Contact Current Rating	5 Amps max. for 0.30 Signal Pins 2.5 Amps max. for .018 Signal Contacts
Characteristic Impedance	50 Ohm constant airline impedance
RF 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 20 GHz
VSWR	1.25:1 max. (mated pair)

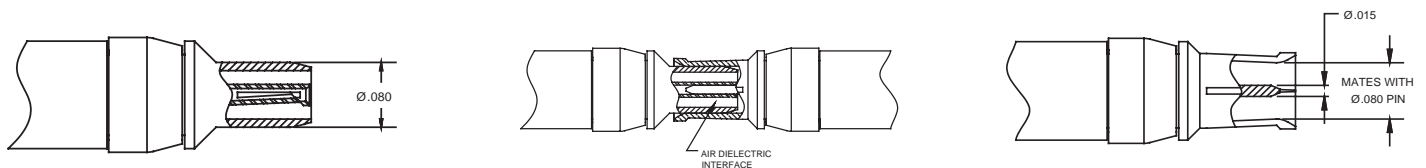
MECHANICAL & ENVIRONMENTAL SPECIFICATIONS:

Temperature Rating	-65° 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	5,000 Cycles min. MDCX
	500 Cycles min. Size 22 Standard Signal 100,000 Cycles min. Hyperboloid® Contacts

MATERIALS & FINISHES:

Center MDCX Contacts	Brass per ASTM B16, Au plated per ASTM B488, Type 3, Class 1.25
Female MDCX Outer Contacts	UNS 17300 be Cu per ASTM 196 or 197, Au per ASTM B488 Type 3, Class 1.25
Male MDCX Outer Contacts	Brass per ASTM B16, Au plated per ASTM B488, Type 3 Class 1.25
Insulators	PTFE per ASTM D-170 and ultem 1000 resin
Plug and Receptacle Outer Shell	Brass per ASTM-B16/B16M, C36000 Electroless nickel plate per SAE-MAS-C-26074, Class 1




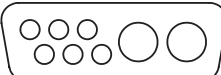




MDCX COAXIAL CONTACT INTERFACE













MDCX COAXIAL CONNECTORS

INSERT ARRANGEMENTS

RECEPTACLE ARRANGEMENTS		
SHELL SIZE 1	SHELL SIZE 2	SHELL SIZE 3
 <p>ARRANGEMENT 4-0 4 MDCX</p>	 <p>ARRANGEMENT 6-0 6 MDCX</p>	 <p>ARRANGEMENT 8-0 8 MDCX</p>
 <p>ARRANGEMENT 2-6 2 MDCX, 6 SIGNAL</p>	 <p>ARRANGEMENT 4-6 4 MDCX, 6 SIGNAL</p>	 <p>ARRANGEMENT 6-6 6 MDCX, 6 SIGNAL</p>
<p>SHELL SIZE 4</p>  <p>ARRANGEMENT 10-0 10 MDCX</p>		 <p>CUSTOM LAYOUTS CONSULT FACTORY</p>

PLUG ARRANGEMENTS		
SHELL SIZE 1	SHELL SIZE 2	SHELL SIZE 3
 <p>ARRANGEMENT 4-0 4 MDCX</p>	 <p>ARRANGEMENT 6-0 6 MDCX</p>	 <p>ARRANGEMENT 8-0 8 MDCX</p>
 <p>ARRANGEMENT 2-6 2 MDCX, 6 SIGNAL</p>	 <p>ARRANGEMENT 4-6 4 MDCX, 6 SIGNAL</p>	 <p>ARRANGEMENT 6-6 6 MDCX, 6 SIGNAL</p>
<p>SHELL SIZE 4</p>  <p>ARRANGEMENT 10-0 10 MDCX</p>		 <p>CUSTOM LAYOUTS CONSULT FACTORY</p>

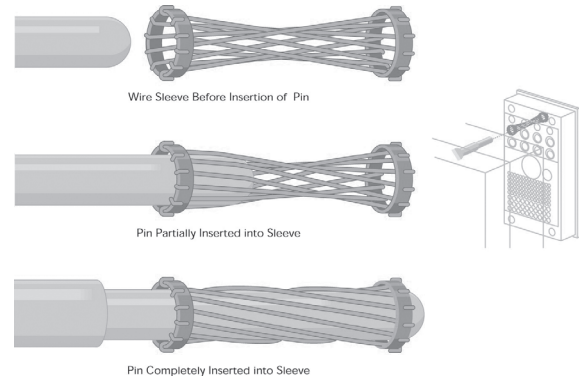
ALL MDCX CONTACTS ARE FRONT RELEASE/REAR REMOVABLE
 ALL SIGNAL CONTACTS ARE REAR REMOVABLE EXCEPT FOR PC-TAIL HYPERTAC CONTACTS (YSK0076-068AH)

RF Coaxial

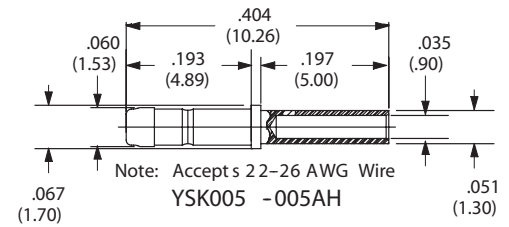


MDCX PART NUMBER ASSIGNMENT

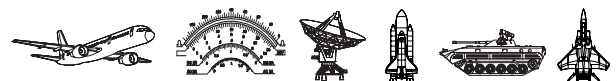
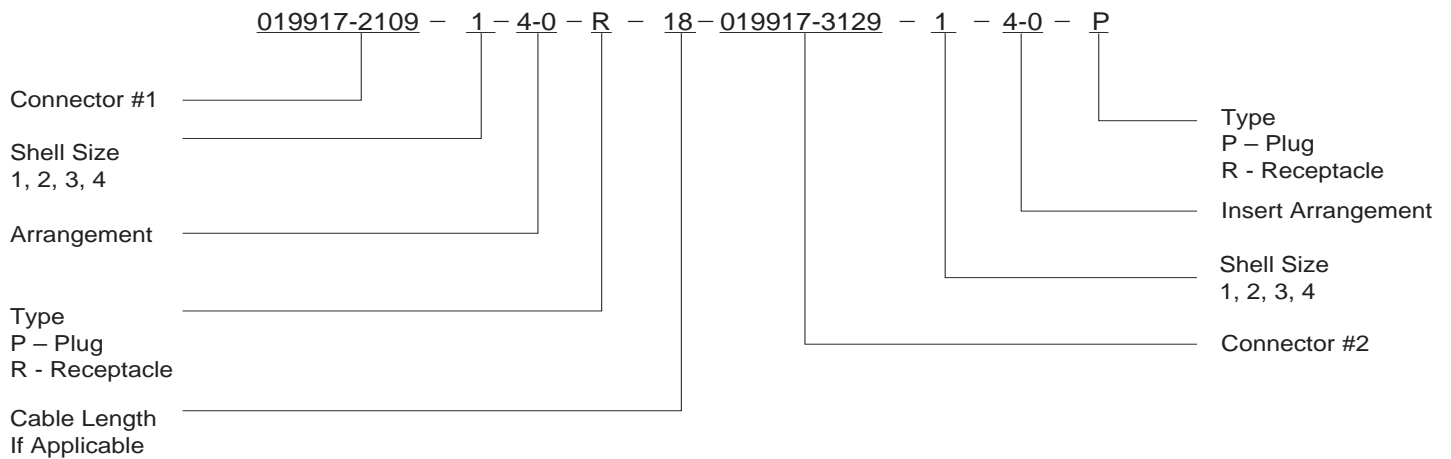
Arrangement	Shell Size	A dim.	B dim.	Signal Contact Engagement Dia.
2-6	1	1.005	1.255	.030 .018*
4-0	1	1.005	1.255	N/A
4-6	2	1.355	1.605	.030 .018*
6-0	2	1.355	1.605	N/A
6-6	3	1.705	1.955	.030 .018*
8-0	3	1.705	1.955	N/A
10-0	4	2.057	2.307	N/A



* For use with Hypertac Crimp Lugs Using YSK005-005AH Contacts
Contact factory for details



Coax Multi-Pin Connector Part Description

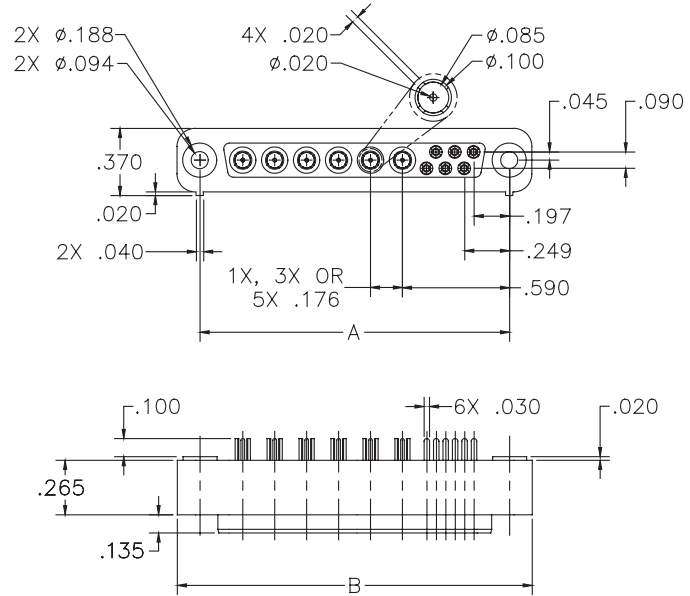
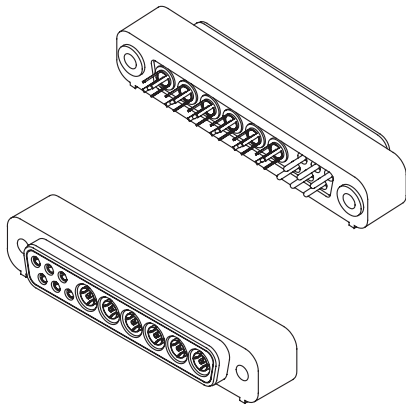




MDCX COAXIAL CONNECTORS

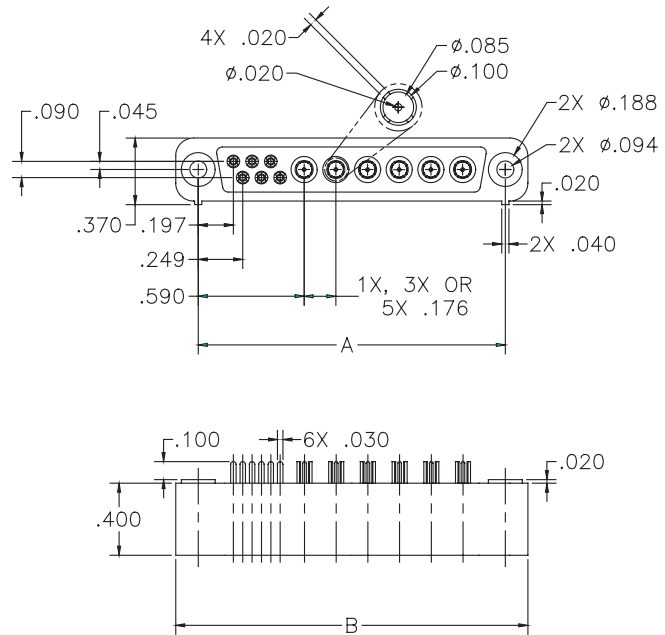
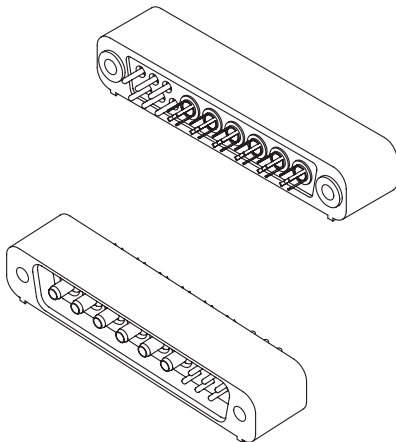
STRAIGHT PC TAIL WITH MDCX AND SIZE 22 SIGNAL CONTACTS

Straight PC-Tail Plug with MDCX and Size 22 Signal Contacts

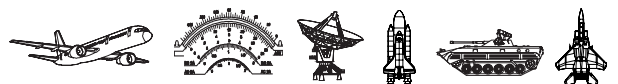


P/N: 019917-2109

Straight PC-Tail Receptacle with MDCX and Size 22 Signal Contacts



P/N: 019917-3129

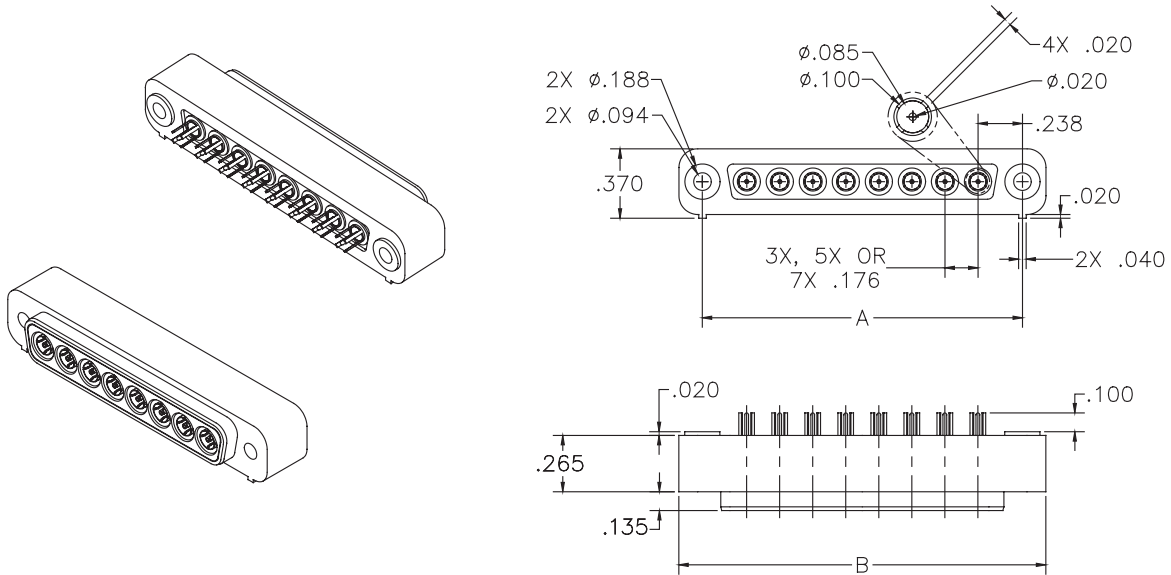




MDCX Coaxial Connectors

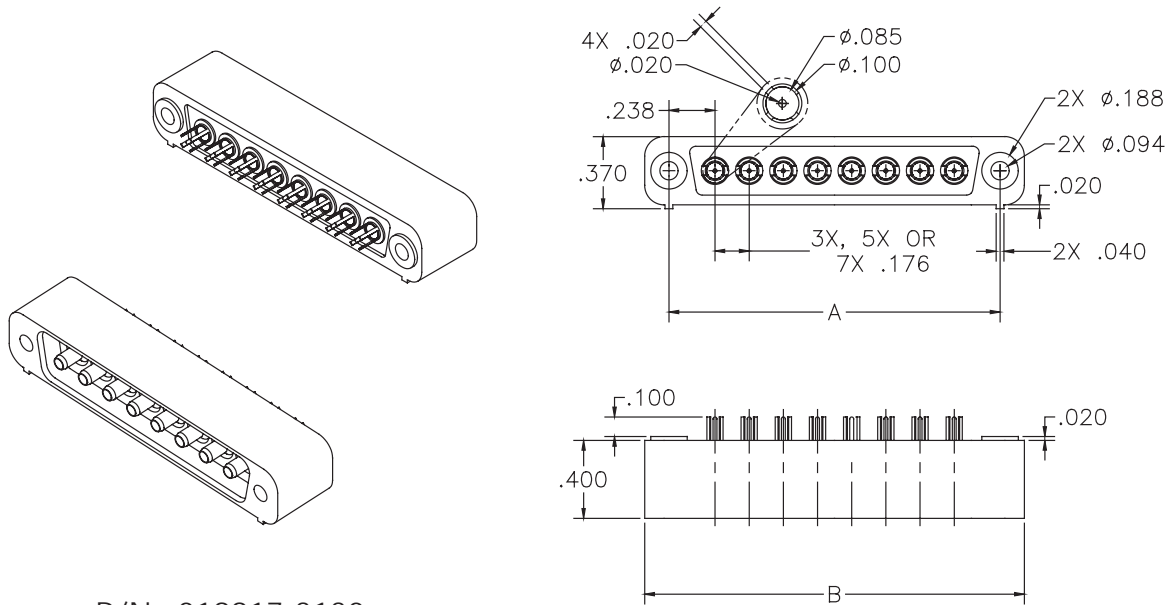
STRAIGHT PC TAIL WITH MDCX CONTACTS

Straight PC-Tail Plug with MDCX Contacts Only



P/N: 019917-2110

Straight PC-Tail Receptacle with MDCX Contacts Only



P/N: 019917-3130

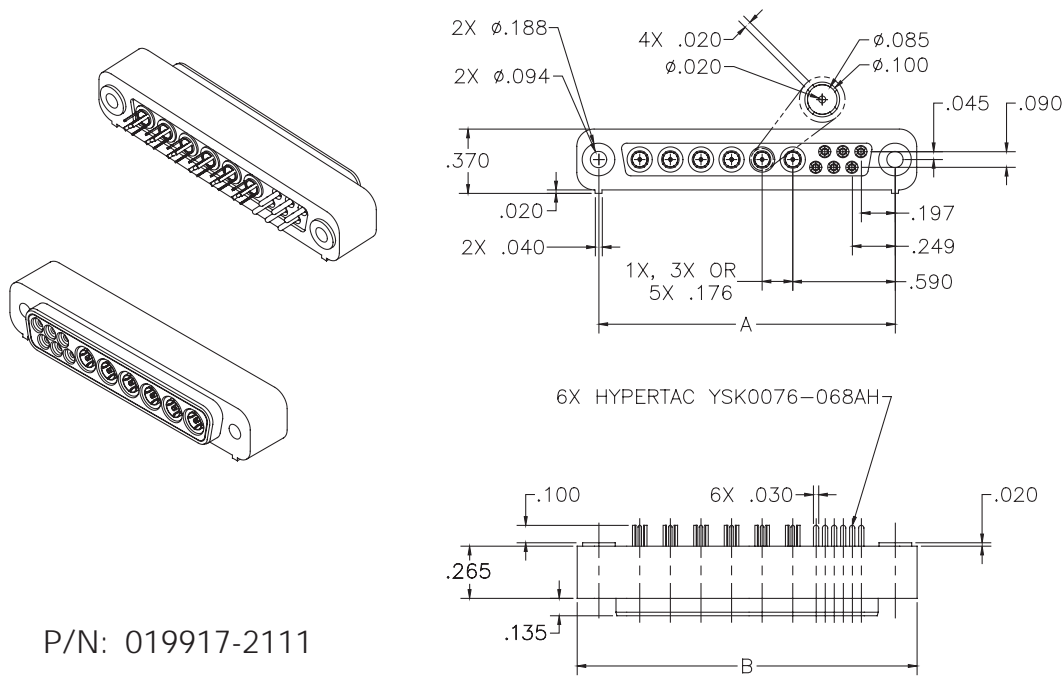




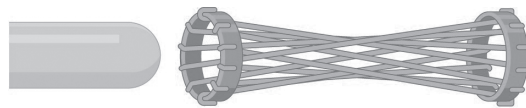
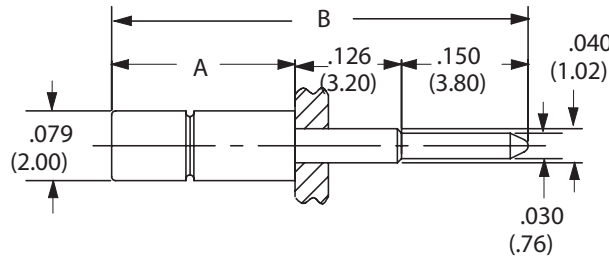
MDCX COAXIAL CONNECTORS

STRAIGHT PC TAIL WITH HYPERBOLOID CONTACTS

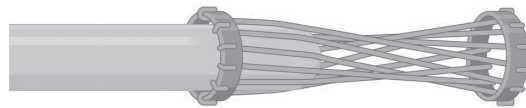
Straight PC-Tail Plug with MDCX and Hyperboloid Signal Contacts



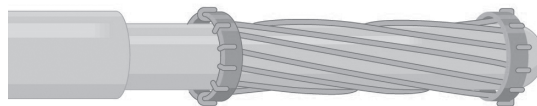
Hypertac YSK0076-068AH



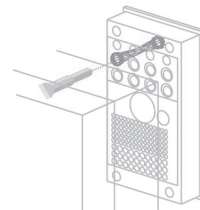
Wire Sleeve Before Insertion of Pin



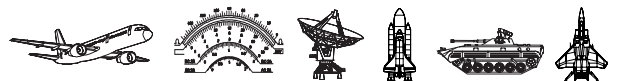
Pin Partially Inserted into Sleeve



Pin Completely Inserted into Sleeve



The shape of the Hyperboloid contact sleeve is formed by wires strung at an angle to the socket's axis. When the pin is inserted into this sleeve, the wires stretch around it, providing a number of linear contact paths.

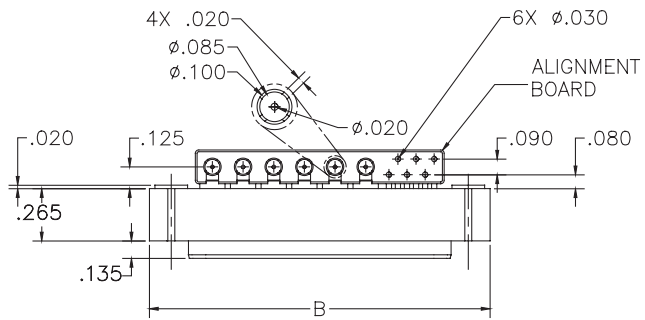
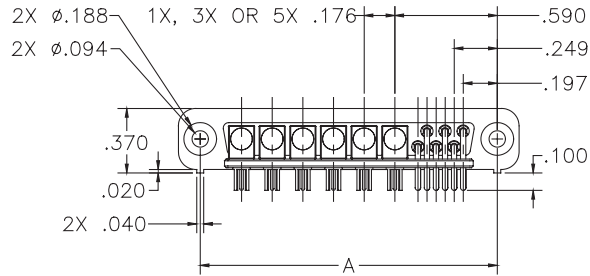
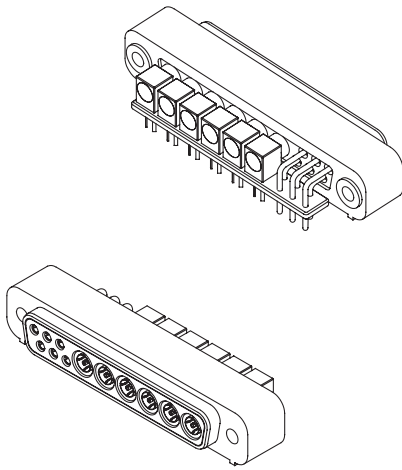




MDCX COAXIAL CONNECTORS

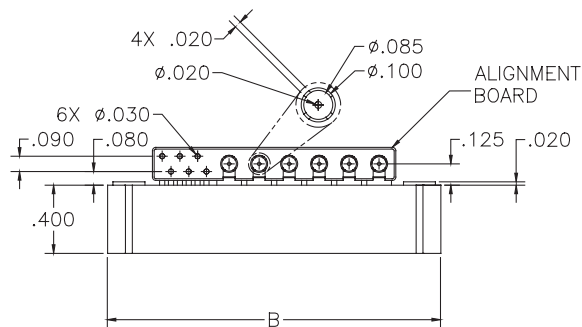
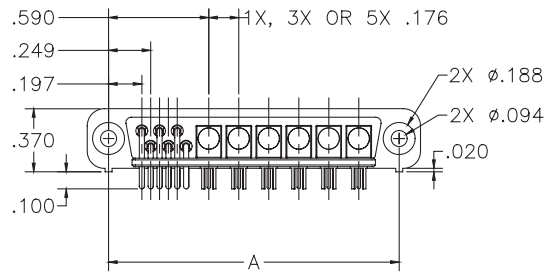
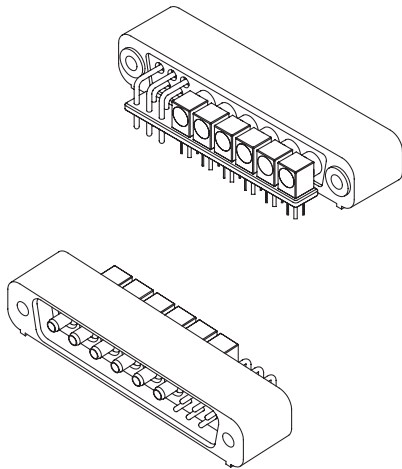
RIGHT ANGLE PC-TAIL WITH MDCX AND SIZE 22 SIGNAL CONTACTS

Right Angle PC-Tail Plug with MDCX and Size 22 Signal Contacts



P/N: 019917-2112

Right Angle PC-Tail Receptacle with MDCX and Size 22 Signal Contacts



P/N: 019917-3131

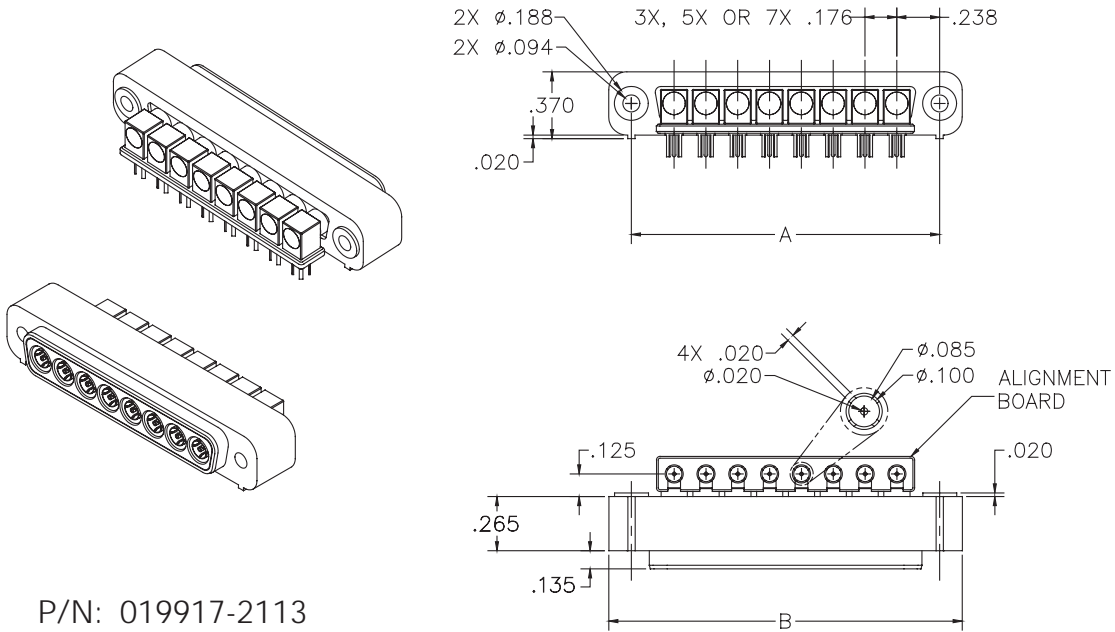




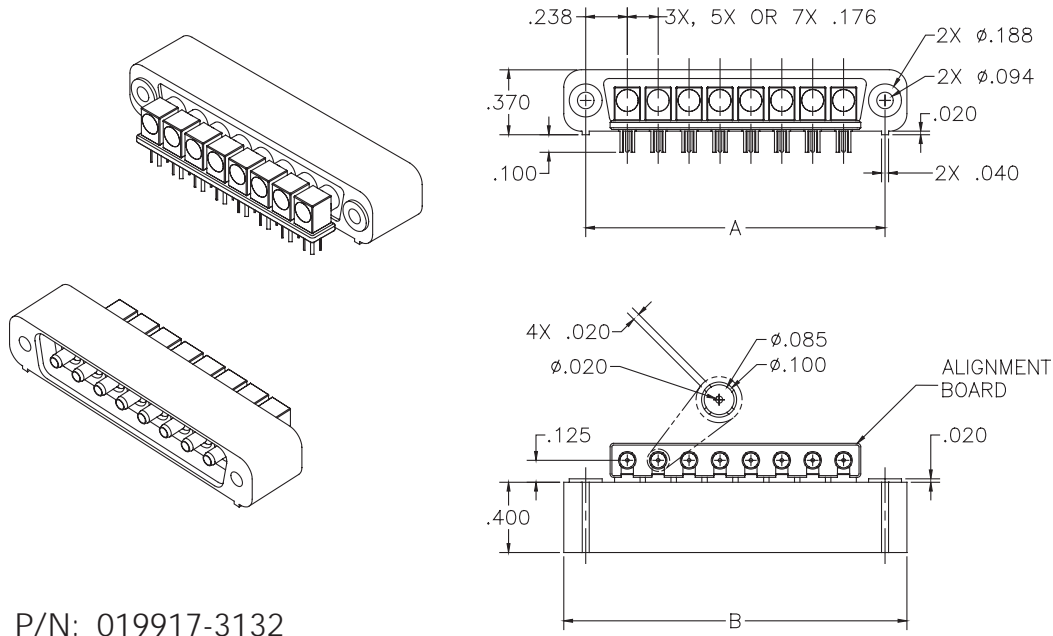
MDCX COAXIAL CONNECTORS

RIGHT ANGLE PC TAIL WITH MDCX CONTACTS

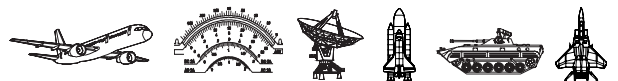
Right Angle PC-Tail Plug with MDCX Contacts Only



Right Angle PC-Tail Receptacle with MDCX Contacts Only



RF Coaxial

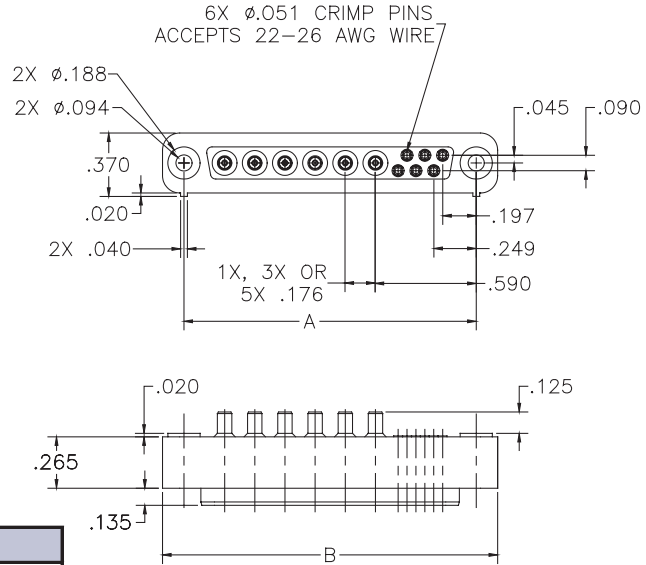
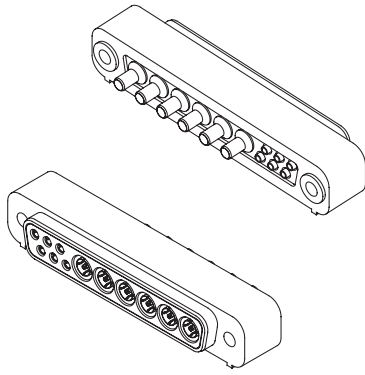




MDCX COAXIAL CONNECTORS

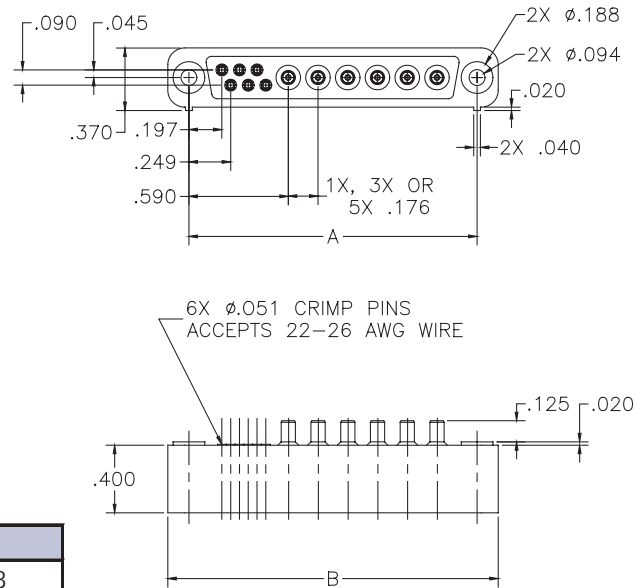
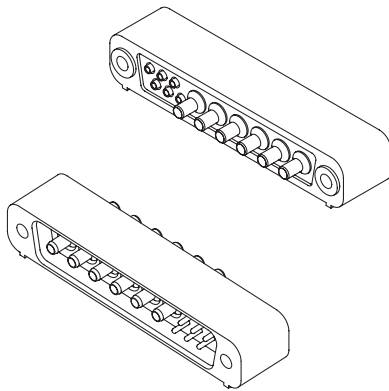
STRAIGHT CRIMP WITH MDCX AND SIZE 22 SIGNAL CONTACTS

Straight Crimp Plug with MDCX and Size 22 Signal Contacts



Part Number	Cable Type	Cable
019914-2001	Flexible Coax	RG-178
019914-2002	Flexible Coax	RG-316

Straight Crimp Receptacle with MDCX and Size 22 Signal Contacts



Part Number	Cable Type	Cable
019914-3001	Flexible Coax	RG-178
019914-3002	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

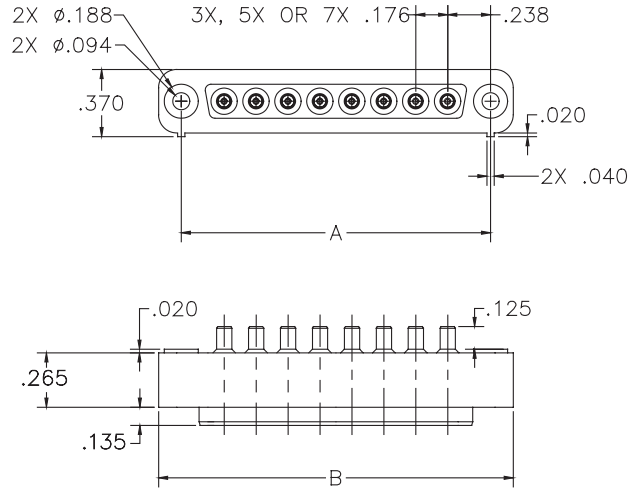
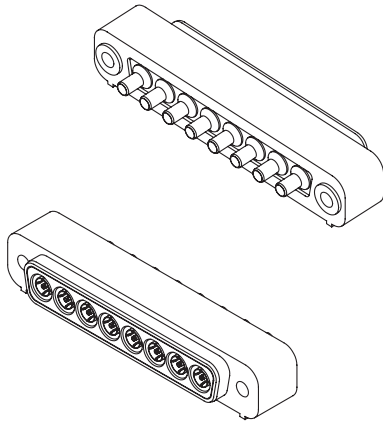




MDCX COAXIAL CONNECTORS

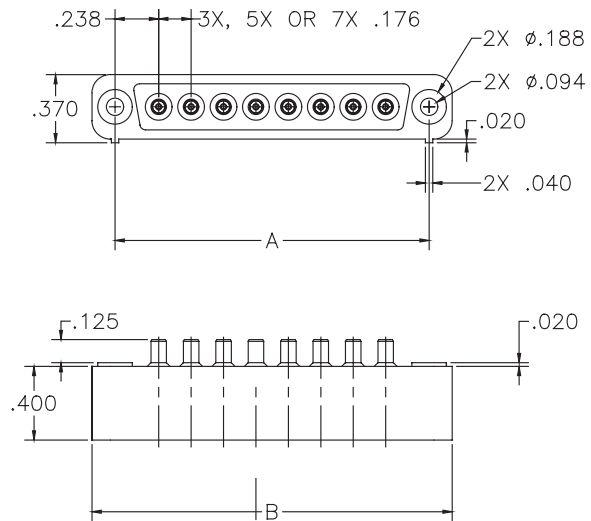
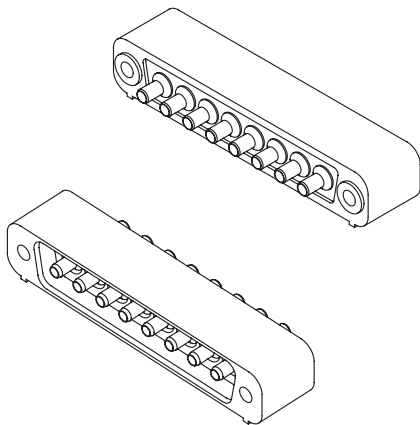
STRAIGHT CRIMP WITH MDCX CONTACTS

Straight Crimp Plug with MDCX Contacts Only



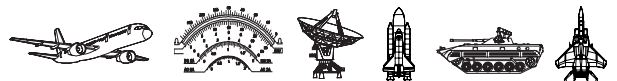
Part Number	Cable Type	Cable
019914-2003	Flexible Coax	RG-178
019914-2004	Flexible Coax	RG-316

Straight Crimp Receptacle with MDCX Contacts Only



Part Number	Cable Type	Cable
019914-3003	Flexible Coax	RG-178
019914-3004	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

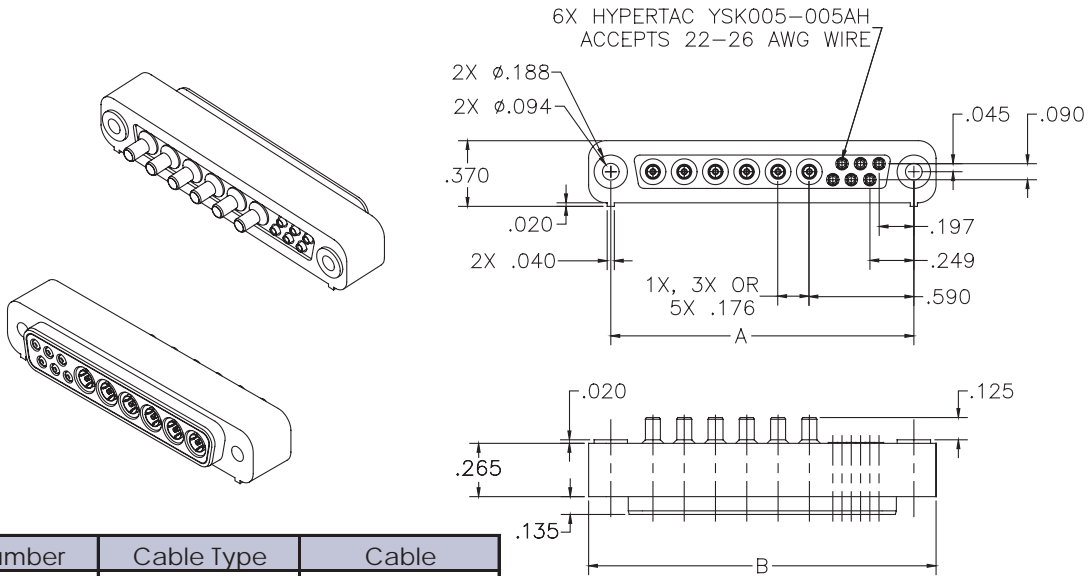




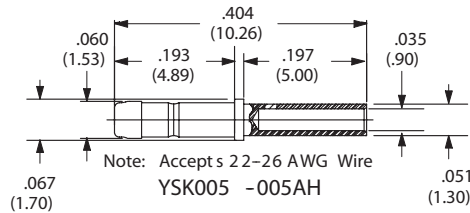
MDCX COAXIAL CONNECTORS

STRAIGHT CRIMP WITH MDCX AND HYPERBOLOID SIGNAL CONTACTS

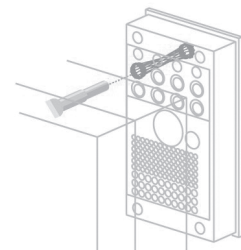
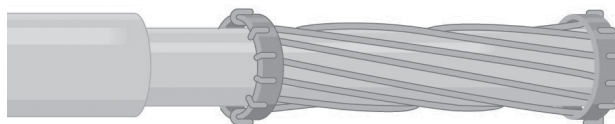
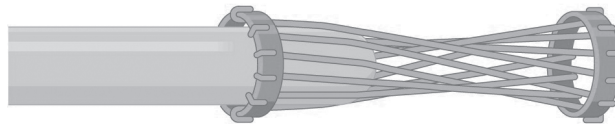
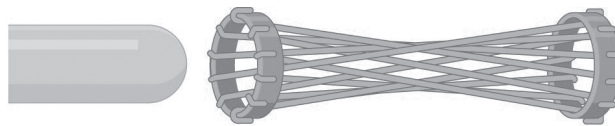
Straight Crimp Plug with MDCX and Hyperboloid Signal Contacts



Part Number	Cable Type	Cable
019914-2009	Flexible Coax	RG-178
019914-2010	Flexible Coax	RG-316



The shape of the Hyperboloid contact sleeve is formed by wires strung at an angle to the socket's axis. When the pin is inserted into this sleeve, the wires stretch around it, providing a number of linear contact paths.

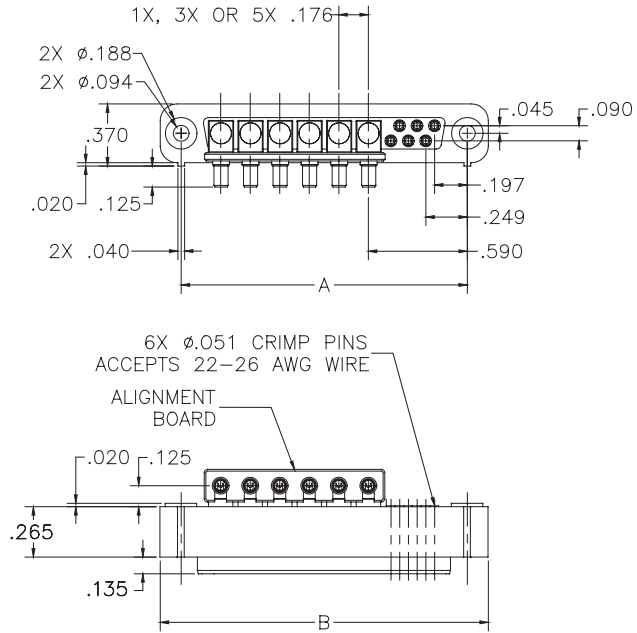
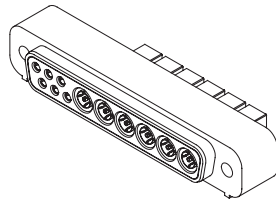
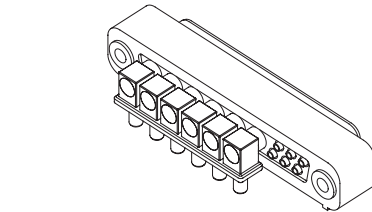




MDCX COAXIAL CONNECTORS

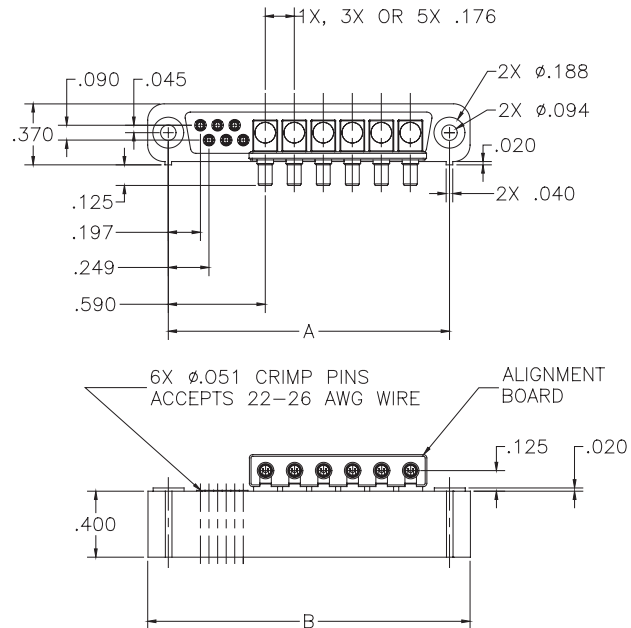
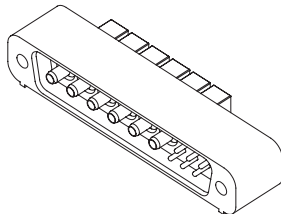
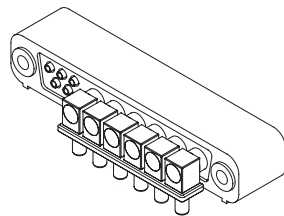
RIGHT ANGLE CRIMP CONNECTORS WITH MDCX AND SIZE 22 SIGNAL CONTACTS

Right Angle Crimp Plug with MDCX and Size 22 Signal Contacts



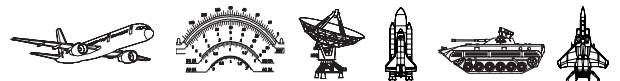
Part Number	Cable Type	Cable
019914-2005	Flexible Coax	RG-178
019914-2006	Flexible Coax	RG-316

Right Angle Crimp Receptacle with MDCX and Size 22 Signal Contacts



Part Number	Cable Type	Cable
019914-3005	Flexible Coax	RG-178
019914-3006	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

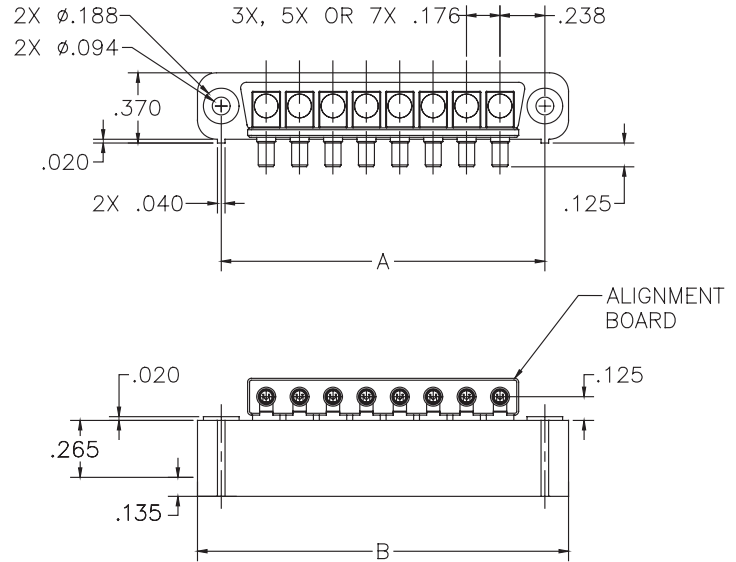
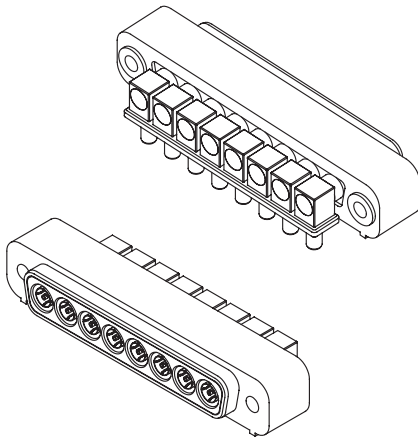




MDCX COAXIAL CONNECTORS

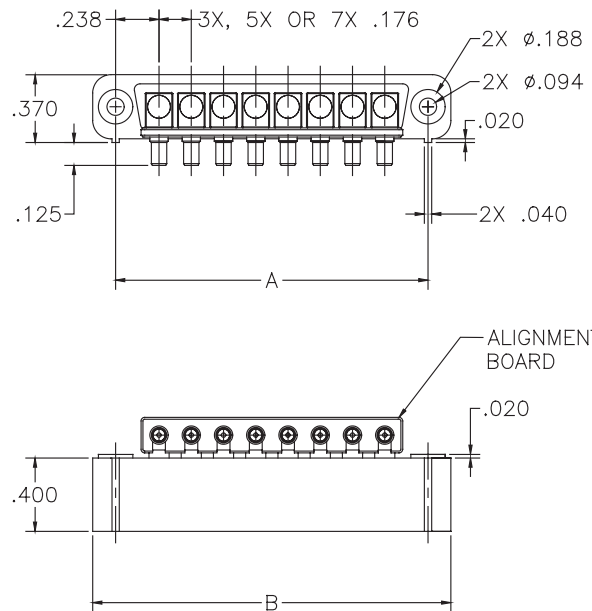
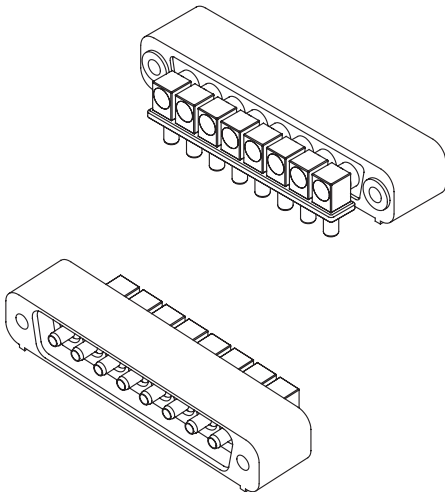
RIGHT ANGLE CRIMP CONNECTORS WITH MDCX CONTACTS

Right Angle Crimp Plug with MDCX Contacts Only



Part Number	Cable Type	Cable
019914-2007	Flexible Coax	RG-178
019914-2008	Flexible Coax	RG-316

Right Angle Crimp Receptacle with MDCX Contacts Only



Part Number	Cable Type	Cable
019914-3007	Flexible Coax	RG-178
019914-3008	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

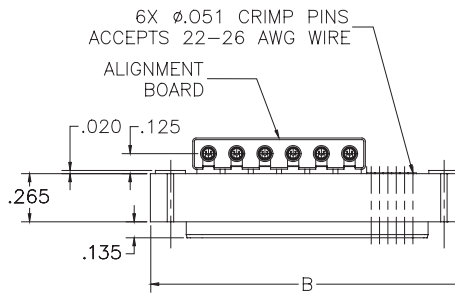
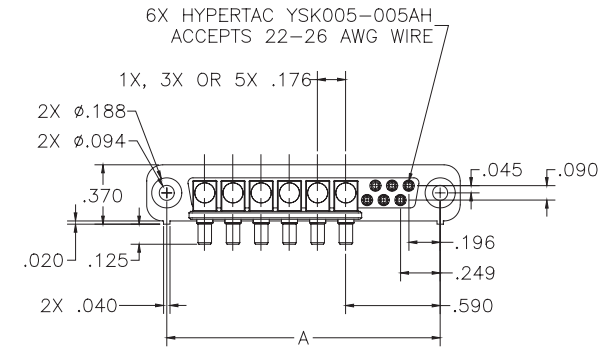
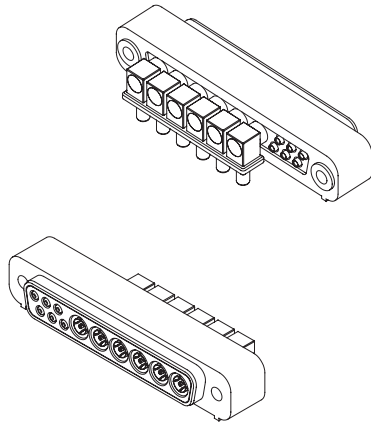




MDCX COAXIAL CONNECTORS

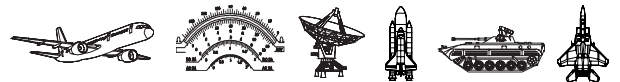
RIGHT ANGLE CRIMP PLUG WITH MDCX AND HYPERBOLOID SIGNAL CONTACTS

Right Angle Crimp Plug with MDCX and Hyperboloid Signal Contacts



Part Number	Cable Type	Cable
019914-2011	Flexible Coax	RG-178
019914-2012	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

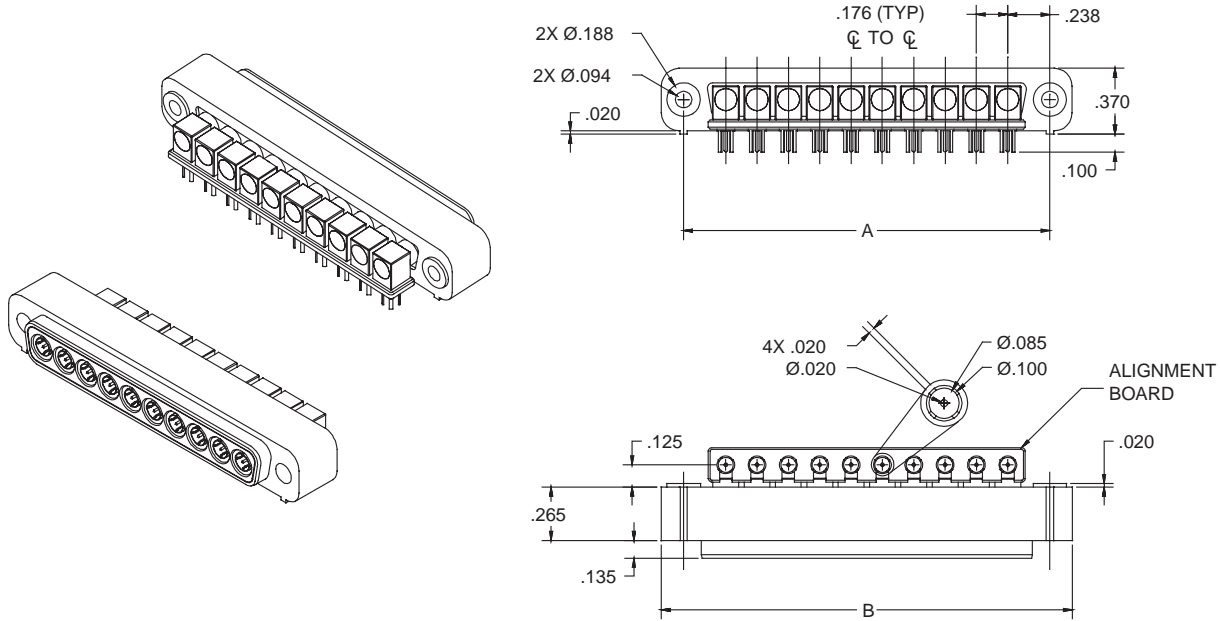




MDCX COAXIAL CONNECTORS

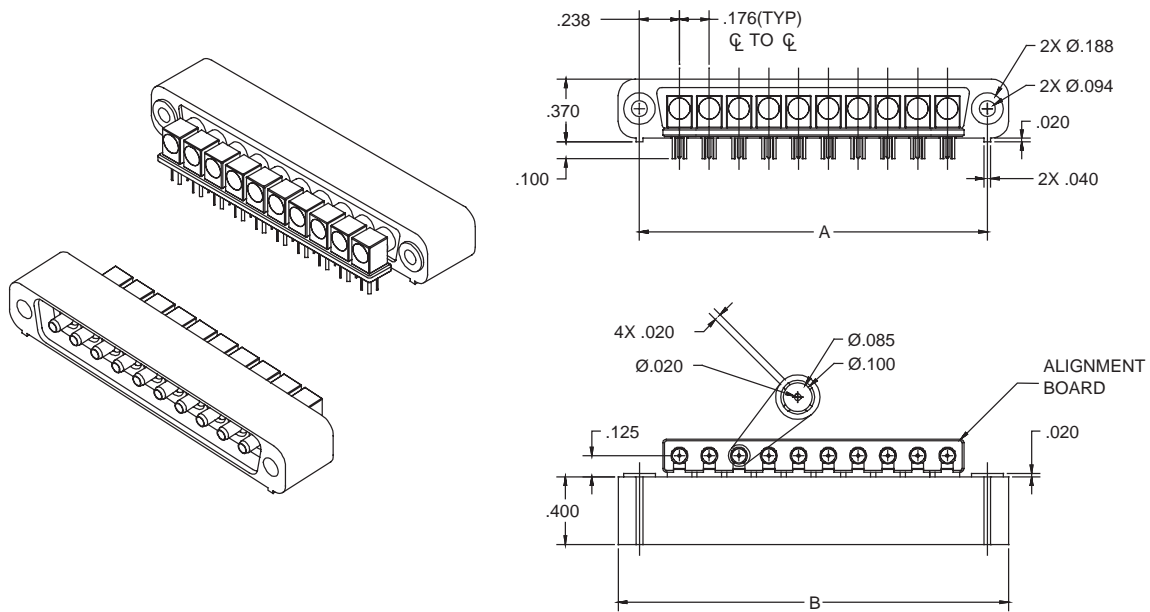
RIGHT ANGLE PC TAIL WITH MDCX CONTACTS

10 Way Right Angle PC Tail Plug with MDCX Contacts Only

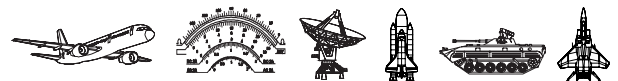


P/N: 019917-2121

10 Way Right Angle PC Tail Receptacle with MDCX Contacts Only



P/N: 019917-3139

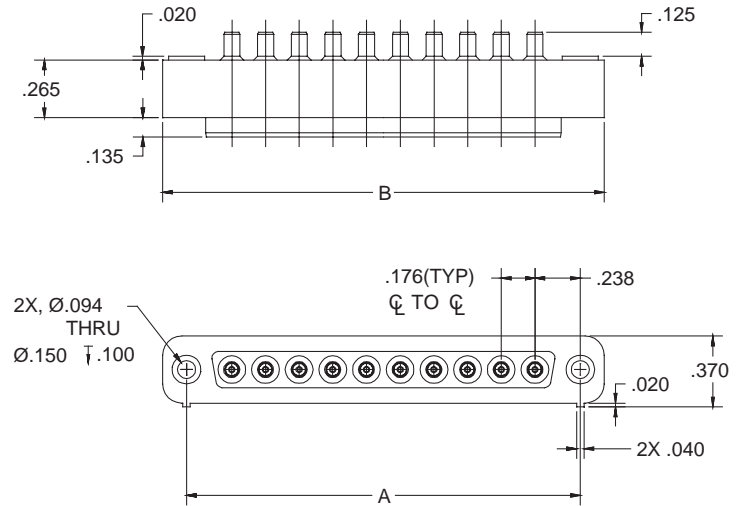
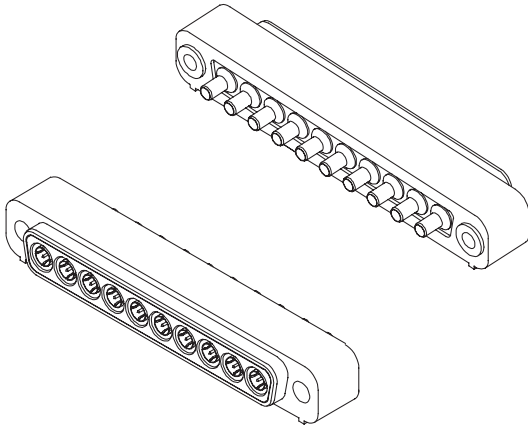




MDCX COAXIAL CONNECTORS

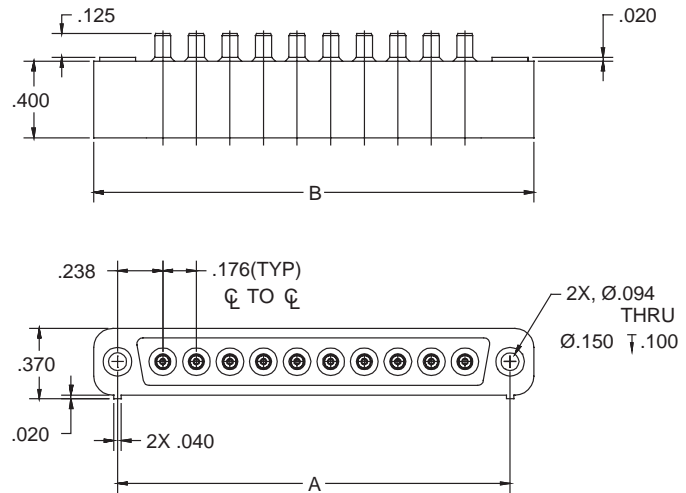
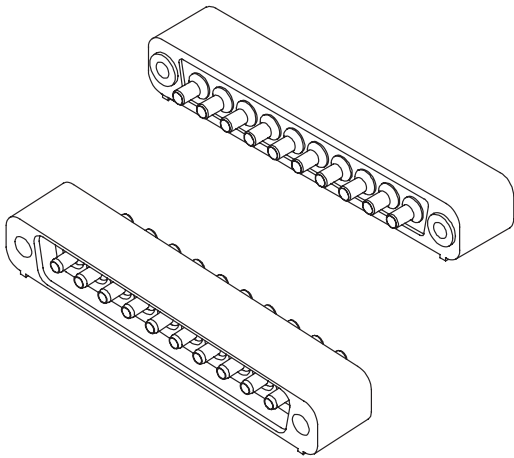
STRAIGHT CRIMP WITH MDCX CONTACTS

10 Way Crimp Plug with MDCX Contacts Only



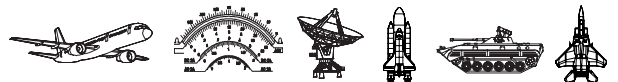
Part Number	Cable Type	Cable
019920-2014	Flexible Coax	RG-178
019911-2213	Flexible Coax	RG-316

10 Way Crimp Receptacle with MDCX Contacts Only



Part Number	Cable Type	Cable
019920-3000	Flexible Coax	RG-178
019911-3007	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

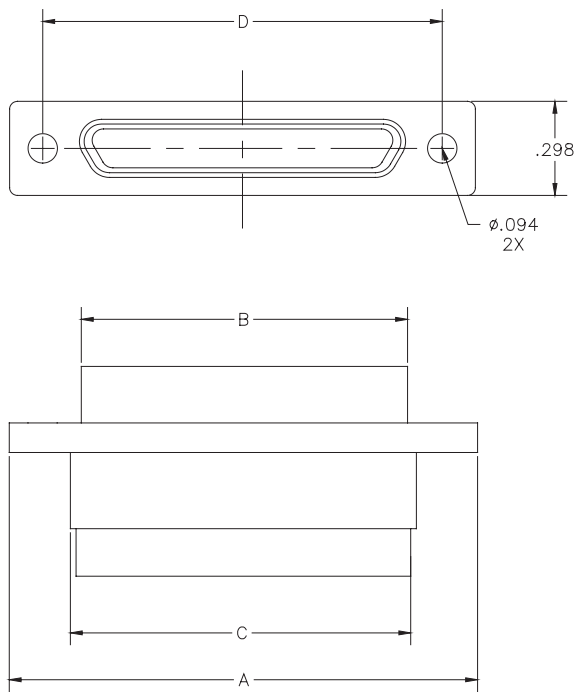




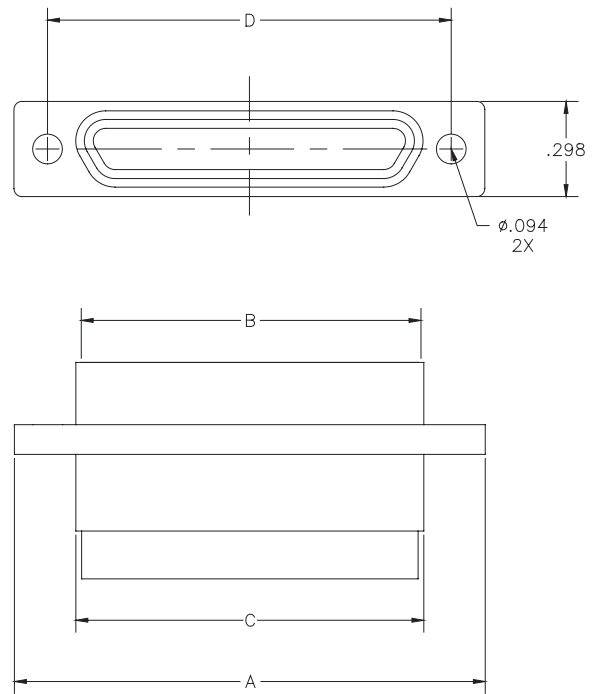
MICRO-D MDCX CONNECTORS

LOW PROFILE MULTIPIN MICRO-D COAXIAL CONNECTORS

Micro-D Plug



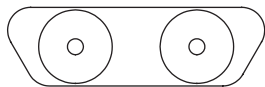
Micro-D Receptacle



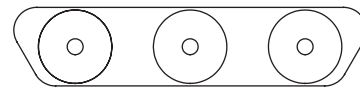
MICRO-D PLUG					
Size	Sabritec P/N	A	B	C	D
15	017200-2000	0.925	0.4838	0.540	0.715
21	017200-2001	1.075	0.6338	0.690	0.865
31	017200-2002	1.325	0.8838	0.940	1.115
37	017200-2003	1.475	1.0338	1.090	1.265

MICRO-D RECEPTACLE					
Size	Sabritec P/N	A	B	C	D
15	017200-3000	0.925	0.4842	0.540	0.715
21	017200-3001	1.075	0.6342	0.690	0.865
31	017200-3002	1.325	0.8842	0.940	1.115
37	017200-3003	1.475	1.0342	1.090	1.265

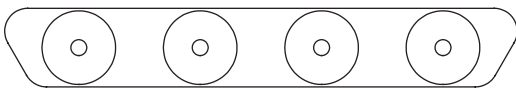
Standard Pin Layouts



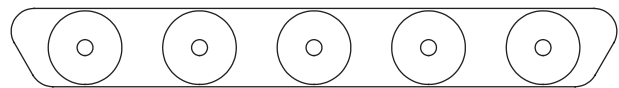
SIZE 15



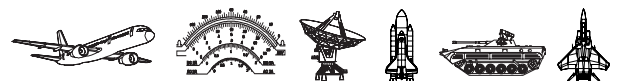
SIZE 21



SIZE 31



SIZE 37

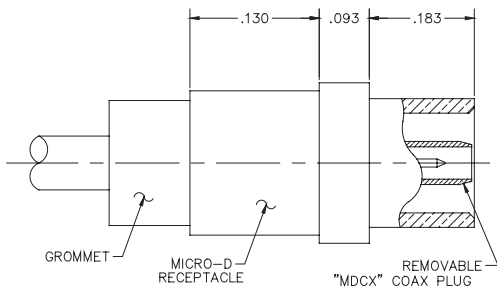




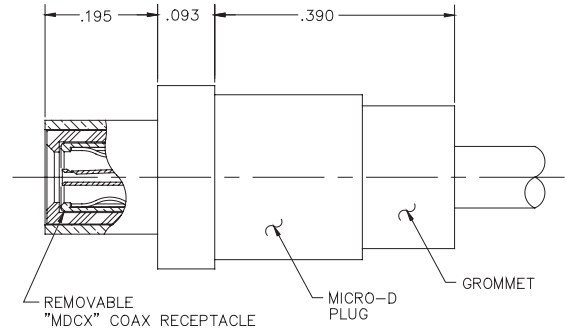
MICRO-D MDCX CONNECTORS

LOW PROFILE MULTIPIN MICRO-D COAXIAL CONNECTORS

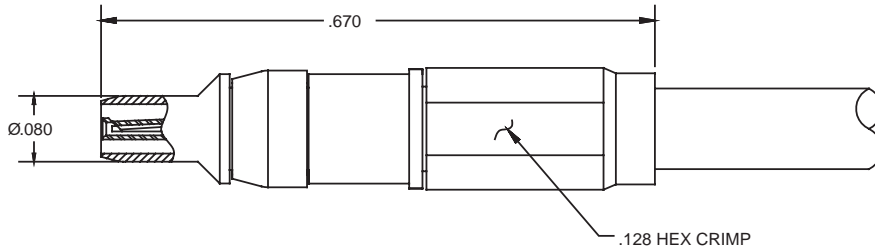
Special Micro-D Plug



Special Micro-D Receptacle

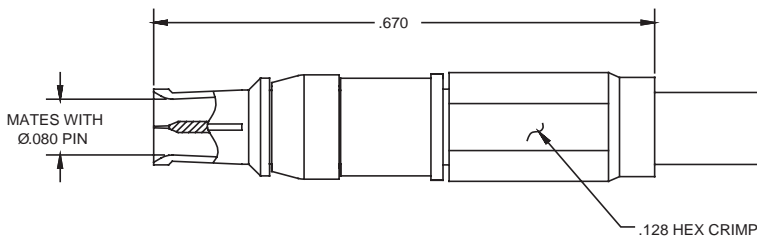


Removable MDCX Coax Plug



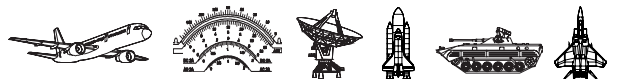
Part Number	Cable Type	Cable
019920-2015	Flexible Coax	RG-178
019911-2212	Flexible Coax	RG-316

Removable MDCX Coax Receptacle



Part Number	Cable Type	Cable
019920-3001	Flexible Coax	RG-178
019911-3006	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information



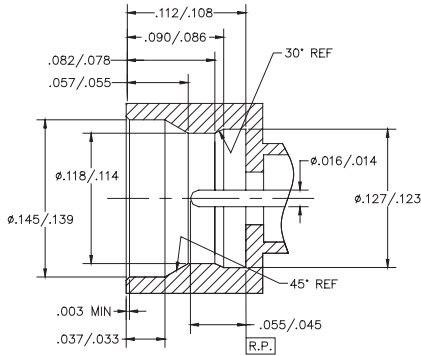


SMP COAXIAL CONNECTORS

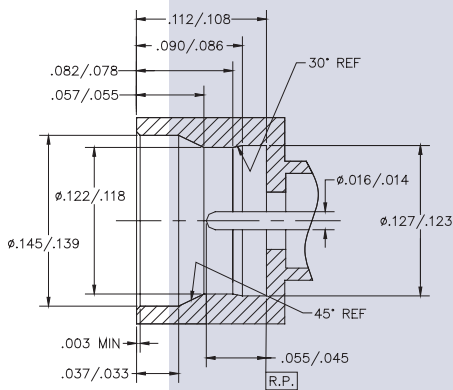
CONNECTOR SPECIFICATIONS

INTERFACE DIMENSIONS

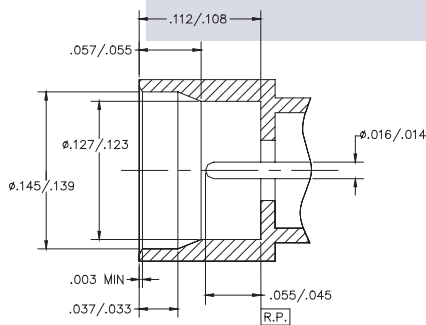
SMP Male Full Detent



SMP Male Limited Detent



SMP Male Smooth Bore



ELECTRICAL SPECIFICATIONS:

Impedance	50-ohm constant airline
Frequency Range	DC to 40 GHz impedance
VSWR	DC to 26.5 GHz 1.15 max. 26.5 to 40GHz 1.5:1 max.
DWV	500 VRMS @ sea level
Insulation Resistance	1000 megaohms min.
Voltage Rating	500 VRMS @ sea level

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS:

Temperature Rating	-65° to +165°C
Corrosion	MIL-STD-202 Method 101, Test Condition B
Shock	MIL-STD-202 Method 213, Test Condition I
Vibration	MIL-STD-202 Method 204, Test Condition D
Thermal Shock	MIL-STD-202 Method 107, Test Condition B
Durability	100 cycles min.
Force to Engage	Full Detent: 15 pounds max.
	Limited Detent: 10 pounds max.
	Smooth Bore, Catcher's Mitt: 2 pounds max.
Force to Disengage	5 pounds min. (full detent)
	2 pounds min. (limited detent)
	0.5 pound min (smooth bore, catcher's mitt)

MATERIALS & FINISHES:

Center Contacts	Brass per ASTM B16, gold plated per ASTM B488, Type 3 Class 1.25
Spring Fingers	Beryllium Copper per ASTM B196, gold plated per ASTM B488, Type 3 Class 1.25
SMP Male Body	Stainless Steel per ASTM A582, passivated per ASTM A967
Insulators	PTFE per ASTM D-1710

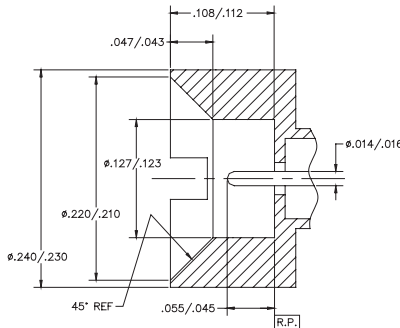
Interconnect Configurations

Flange Mount
Right Angle Flange Mount
Thread-In Box Mount
Press-In Flange Mount
PCB Mount, Right Angle & Straight
Cable Connectors, Semi-Rigid & Flexible RG Cables

All specifications subject to change without notice.

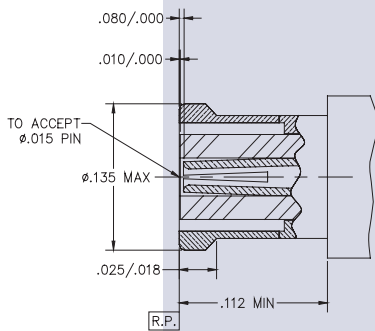


SMP Male Catchers Mitt



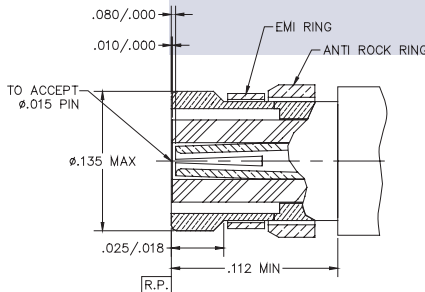
Sabritec's SMP coax connector line features a snap-in vibration-proof connection, suitable for high shock mobile applications and space level connector requirements of extreme random vibration, thermal shock, and outgassing environments. Frequency range is DC-40 GHz with low VSWR and insertion loss (dB) parameters of $0.10 \sqrt{F(GHz)}$ dB max. The extremely small package size allows for high density board-to-board applications. Blind mate SMP connectors are available in smooth bore for maximum float of mating (0.015" radial and axial misalignment between mating planes). The full and limited detent SMP connections are suitable for mobile applications with extreme shock and vibration requirements. These connectors meet or exceed the applicable requirements of DESC drawing numbers 94007 and 94008.

SMP Female Socket (Adapter)



In addition to the SMP coaxial connector line, Sabritec offers a smaller SMPM series. The SMPM series is available with detent and nondetent mating levels with blindmate capabilities. The SMPM coaxial connector is 30% smaller than the SMP and has the advantage of a higher frequency range capable of 60 GHz.

SMP Female Socket (Cable)



Features and Benefits:

- ◆ Meets extreme shock and high vibration requirements
- ◆ Snap in connection
- ◆ Durable light weight construction
- ◆ Ideal for high density packaging
- ◆ Full and limited detent locking
- ◆ Blind-mate smooth bore series available
- ◆ Space approved SMP connectors available
- ◆ Permits high density board-to-board connections
- ◆ Gold plated contact members

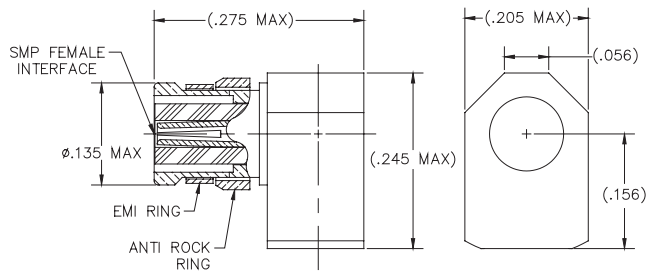




SMP CONNECTORS

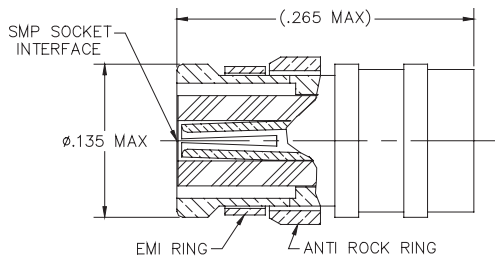
CABLE MOUNT/PCB CONNECTORS

SMP Right Angle Female to S/R Cable



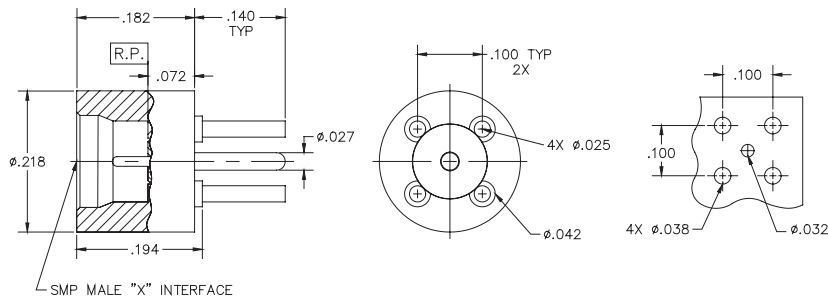
Part Number	Cable Type	Cable
219936-1000	Semi-Rigid	SR.047
219909-1001	Semi-Rigid	RG-405

SMP Straight Female to S/R Cable



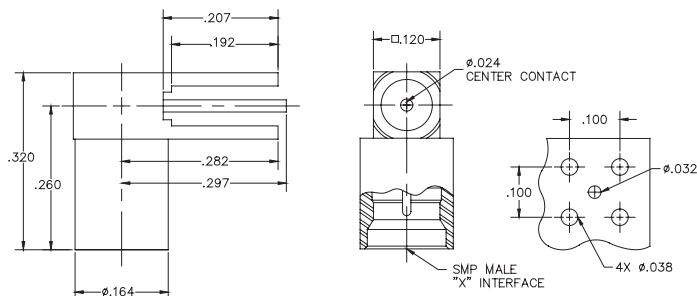
Part Number	Cable Type	Cable
219936-3000	Semi-Rigid	SR.047
219909-3001	Semi-Rigid	RG-405

SMP Male Straight PCB Mount



Part Number	Detent Level
219900-2000	FD
219900-2001	LD
219900-2002	SB

SMP Male Right Angle PCB Mount



Part Number	Detent Level
219900-1000	FD
219900-1001	LD
219900-1002	SB

See Page 197 for Cable Ordering Information

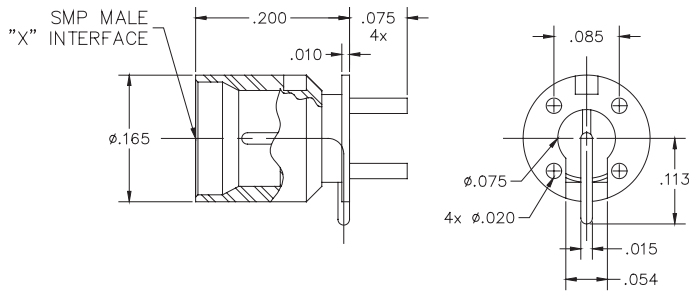




SMP PCB MOUNT CONNECTORS

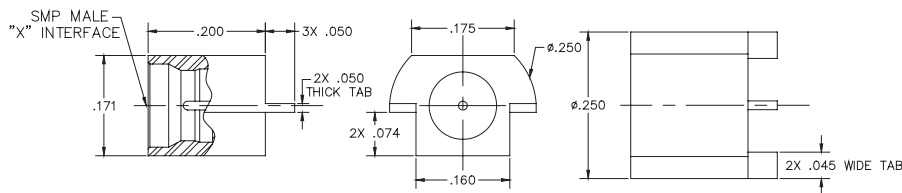
PCB TYPE CONNECTORS

SMP Male Straight PCB Mount



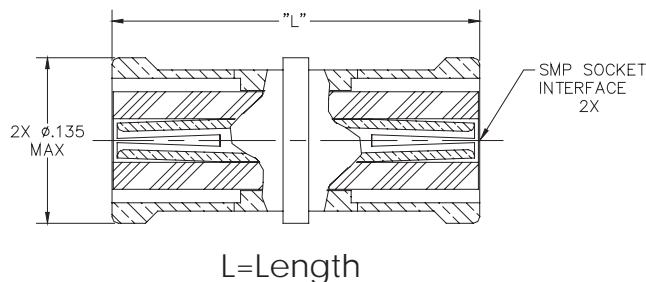
Part Number	Detent Level
219900-2003	FD
219900-2004	LD
219900-2005	SB

SMP Male PCB Edge Launch to Straight Termination



Part Number	Detent Level
219900-2006	FD
219900-2007	LD
219900-2008	SB

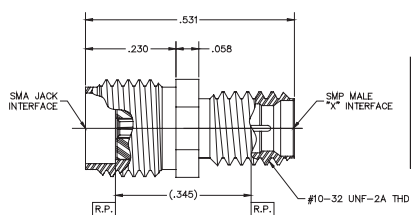
SMP Female to Female Adapter



Part Number	Length
219900-4000	0.254
219900-4001	0.395
219900-4002	0.484
219900-4003	0.569

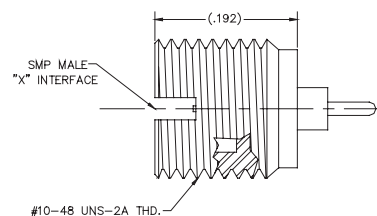
FEED-THRU ADAPTERS/TERMINATORS

SMA Female to SMP Male Thread-In Adapter



Part Number	Detent Level
219900-4008	FD
219900-4009	LD
219900-4010	SB

SMP Male Straight Termination

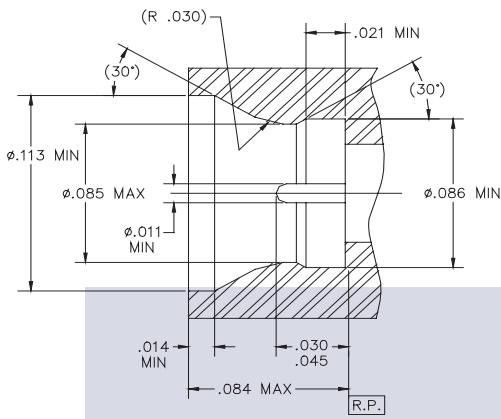


Part Number	Detent Level
219900-2009	FD
219900-2010	LD
219900-2011	SB

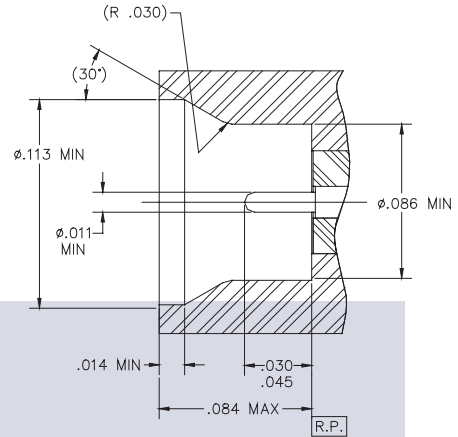




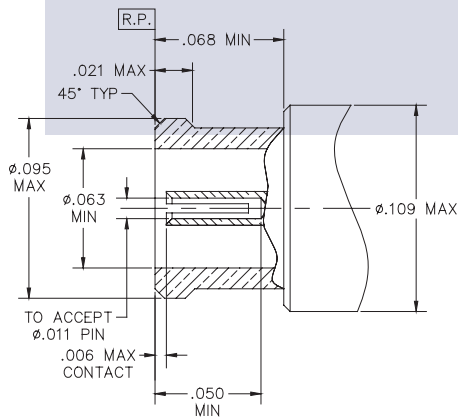
SMPM Male Detent



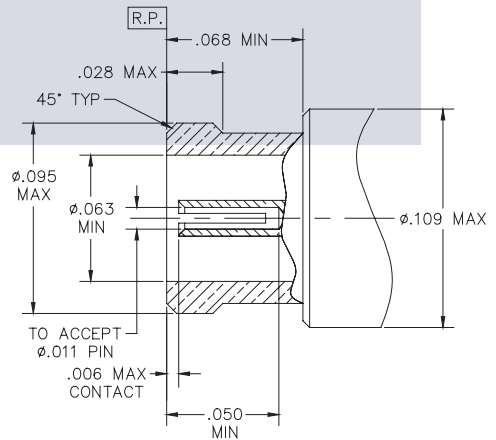
SMPM Male Non-Detent



SMPM Female (Adapter)



SMPM Female (Cable)

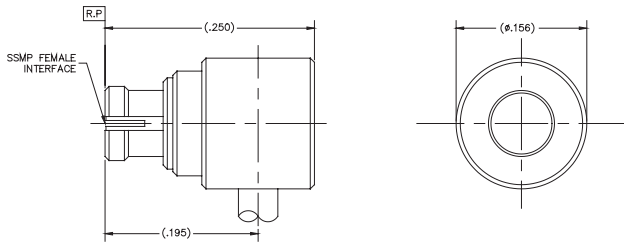




SMMP CABLE CONNECTORS

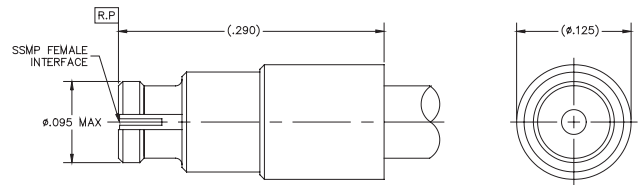
CABLE MOUNT CONNECTORS/ADAPTERS

SMMP Right Angle Female to S/R Cable



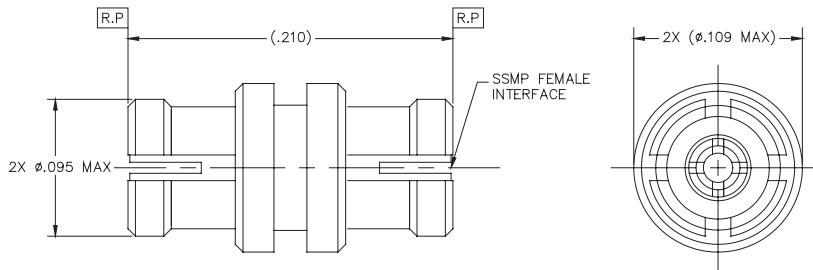
Part Number	Cable Type	Cable
229936-1000	Semi-Rigid	SR .047
229909-1001	Semi-Rigid	RG-405

SMMP Straight Female to S/R Cable



Part Number	Cable Type	Cable
229936-3000	Semi-Rigid	SR .047
229909-3001	Semi-Rigid	RG-405

SMMP Female to Female Adapter



P/N 229900-4000

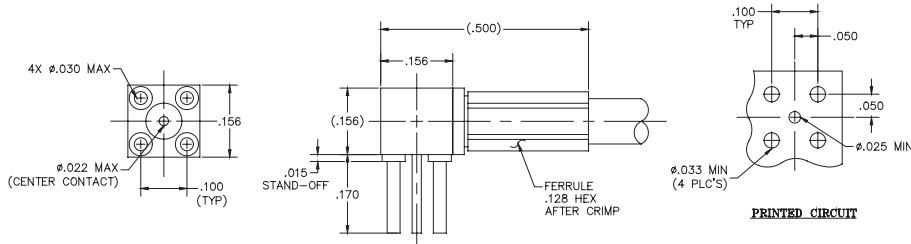
RF Coaxial

See Page 197 for Cable Ordering Information



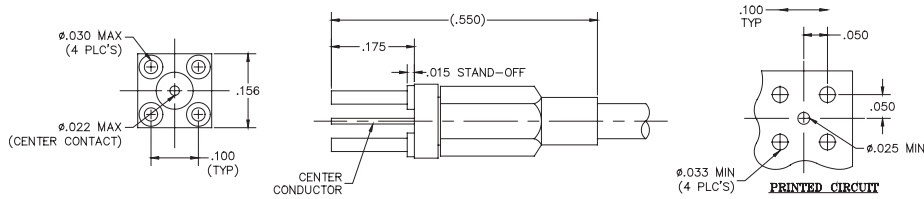


Right Angle PCB Mount to Cable



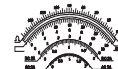
Part Number	Cable Type	Cable
010012-1011	Flexible Coax	RG-178
010012-1012	Flexible Coax	RG-316

Straight PCB Mount to Cable



Part Number	Cable Type	Cable
010012-2010	Flexible Coax	RG-178
010012-2011	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information



Sabritec's coaxial contacts provide flexibility in the design of high frequency RF and microwave applications. The contacts, including sizes 5, 8, 9, 12, and 16, have the same outline dimensions as traditional power contacts and 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.

Sabritec also manufactures a complete line of stand-alone coax connectors including SCX, SMP, SMPM and MDCX series as well as other specific application configurations.

FEATURES

- ◆ Fits standard MIL-DTL-38999 sizes 8, 12 & 16 contact cavities, ARINC 600 sizes 5, 12 and 16, and ARINC 404 size 9 standard rack & panel connector cavities
- ◆ Small size for high density packaging
- ◆ Ideal for RF and microwave applications for instruments, radar, communications, and RF shielding.

ELECTRICAL SPECIFICATIONS:

Dielectric Withstanding Voltage	500 VRMS @ sea level with 70% relative humidity
Insulation Resistance	1000 megaohms min. @ 250 VDC
Contact Current Rating	1.5 Amps, D.C. max
Characteristic Impedance	50 Ohm constant airline impedance
RF 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 5GHz
VSWR	1.3:1 max. (mated pair)

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS:

Temperature Rating	-65° 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

MATERIALS & FINISHES:

Center Contacts	Brass per ASTM B16, gold plated per ASTM B488, Type 3 Class 1.25
Spring Fingers	Beryllium copper per ASTM B196, gold plated per ASTM B488, Type 3 Class 1.25
Plug Body & Receptacle	Brass per ASTM B16, gold plated per ASTM B488, Type 3 Class 1.25
Insulators	PTFE per ASTM D-1710

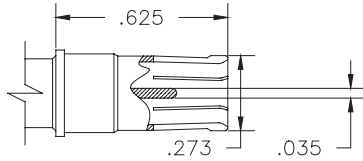


Size 8 Coax Pin and Socket Contacts

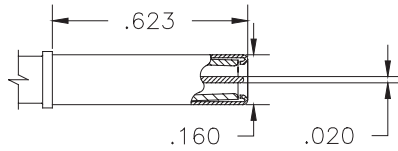


COAXIAL CONTACTS

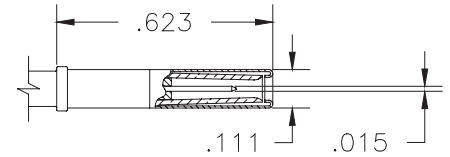
INTERFACE DIMENSIONS



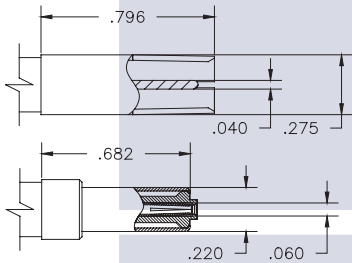
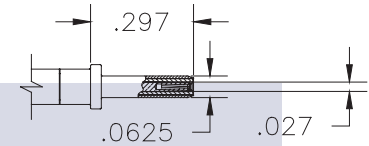
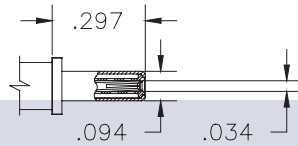
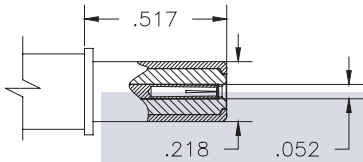
MIL-DTL-38999 Size 8



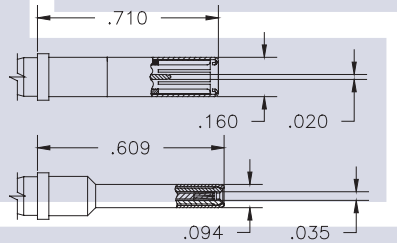
MIL-DTL-38999 Size 12



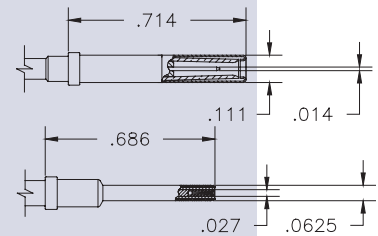
MIL-DTL-38999 Size 16



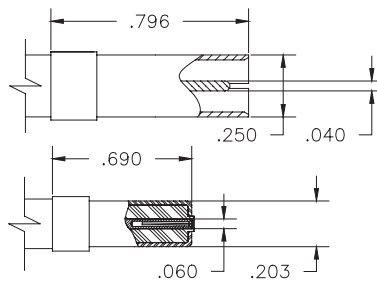
ARINC 600 Size 5



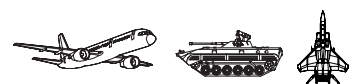
ARINC 600 Size 12



ARINC 600 Size 16



ARINC 404 Size 9

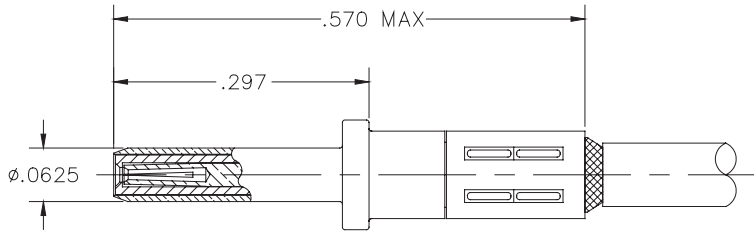




MIL-DTL-38999 Coaxial Contacts

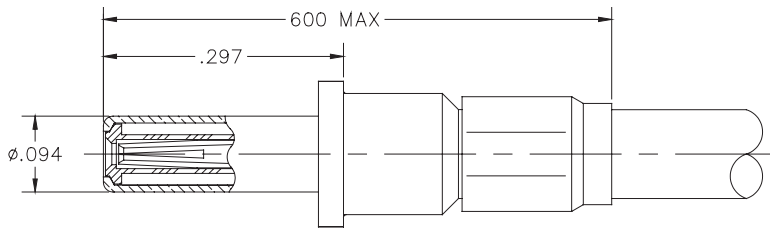
COAXIAL PIN CONTACTS SERIES I, III, IV CONTACTS

MIL-DTL-38999 Size 16 Coax Pin



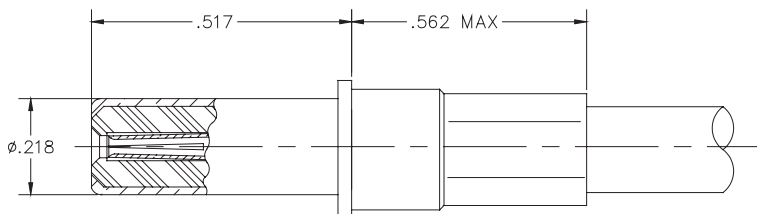
Part Number	Cable Type	Cable
018512-2100	Flexible Coax	RG-178
018512-2101	Flexible Coax	RG-316

MIL-DTL-38999 Size 12 Coax Pin



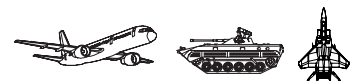
Part Number	Cable Type	Cable
018612-2118	Flexible Coax	RG-178
018612-2119	Flexible Coax	RG-316

MIL-DTL-38999 Size 8 Coax Pin



Part Number	Cable Type	Cable
019612-2100	Flexible Coax	RG-58
019612-2101	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

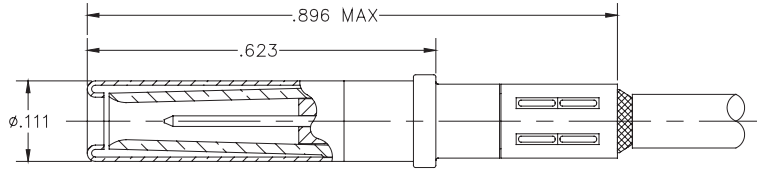




MIL-DTL-38999 COAXIAL CONTACTS

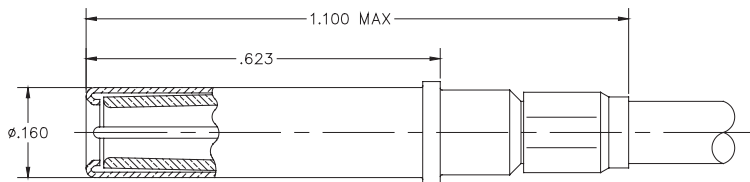
COAXIAL SOCKET CONTACTS SERIES I, III, IV CONTACTS

MIL-DTL-38999 Size 16 Coax Socket



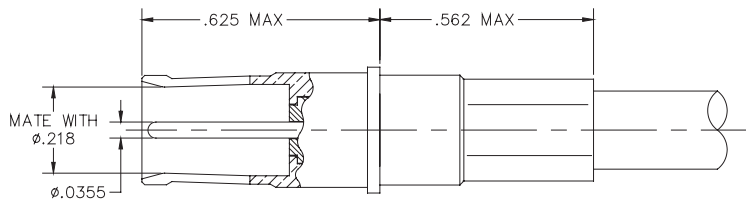
Part Number	Cable Type	Cable
018412-2100	Flexible Coax	RG-178
018412-2101	Flexible Coax	RG-316

MIL-DTL-38999 Size 12 Coax Socket



Part Number	Cable Type	Cable
018712-2118	Flexible Coax	RG-178
018712-2119	Flexible Coax	RG-316

MIL-DTL-38999 Size 8 Coax Socket



Part Number	Cable Type	Cable
019512-2100	Flexible Coax	RG-58
019512-2101	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

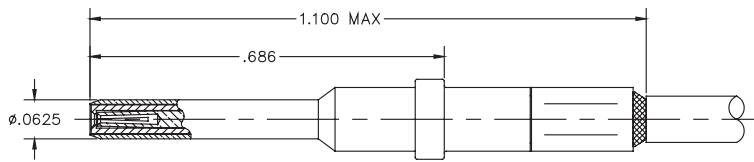




ARINC 600/ARINC 404 COAXIAL CONTACTS

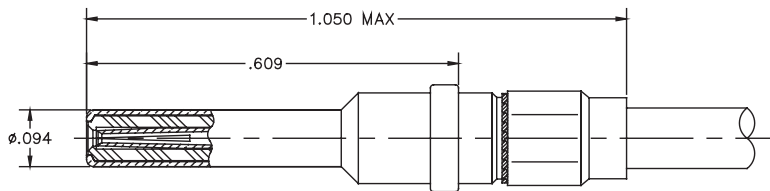
COAXIAL PIN CONTACTS

ARINC 600 Size 16 Coax Pin



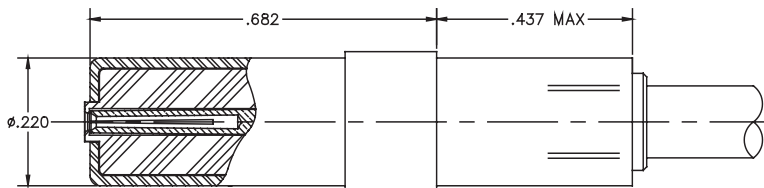
Part Number	Cable Type	Cable
018512-2200	Flexible Coax	RG-178
018512-2201	Flexible Coax	RG-316

ARINC 600 Size 12 Coax Pin



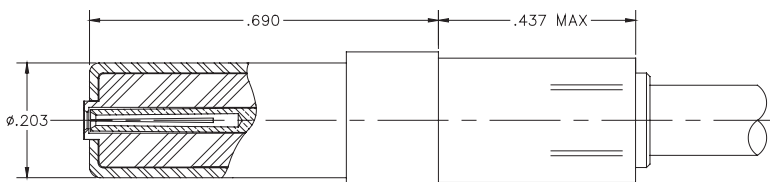
Part Number	Cable Type	Cable
018612-2200	Flexible Coax	RG-178
018612-2201	Flexible Coax	RG-316

ARINC 600 Size 5 Coax Pin



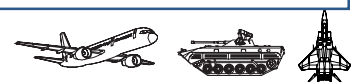
Part Number	Cable Type	Cable
019412-2200	Flexible Coax	RG-58
019412-2201	Flexible Coax	RG-316

ARINC 404 Size 9 Coax Pin



Part Number	Cable Type	Cable
019212-2016	Flexible Coax	RG-58
019212-2017	Flexible Coax	RG-316

See Page 197 for Cable Ordering Information

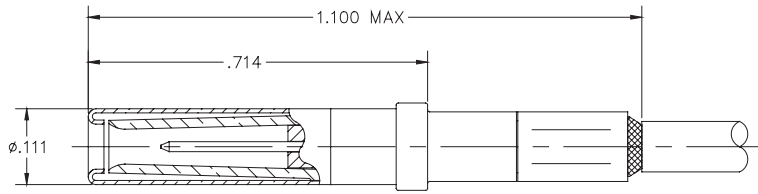




ARINC 600/ARINC 404 COAXIAL CONTACTS

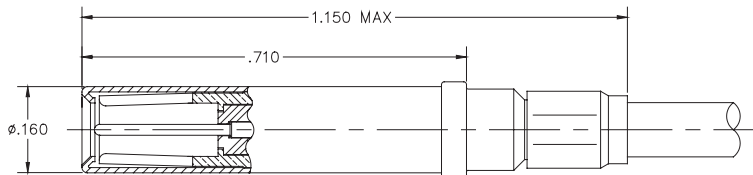
COAXIAL SOCKET CONTACTS

ARINC 600 Size 16 Coax Socket



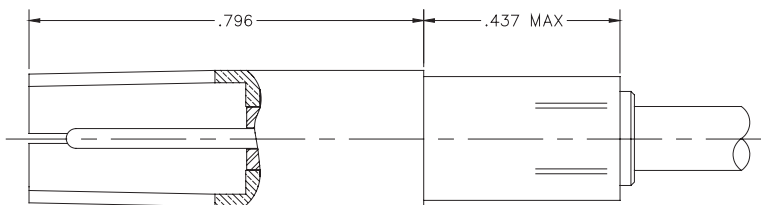
Part Number	Cable Type	Cable
018412-2200	Flexible Coax	RG-178
018412-2201	Flexible Coax	RG-316

ARINC 600 Size 12 Coax Socket



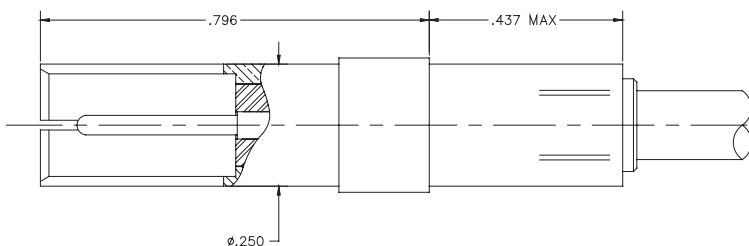
Part Number	Cable Type	Cable
018712-2200	Flexible Coax	RG-178
018712-2201	Flexible Coax	RG-316

ARINC 600 Size 5 Coax Socket



Part Number	Cable Type	Cable
019312-2200	Flexible Coax	RG-58
019312-2201	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

See Page 197 for Cable Ordering Information

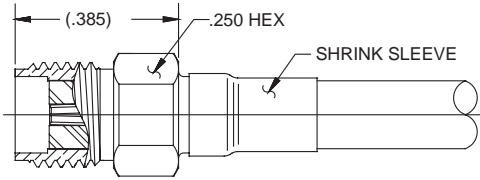




SEMI-RIGID COAXIAL CONNECTORS

SMA AND TNC CONNECTORS

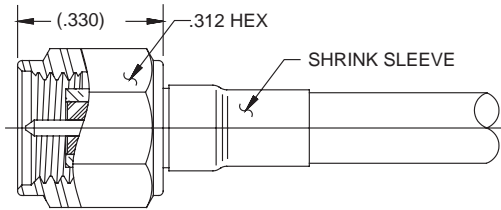
Straight SMA Jack



Part Number	Cable Type	Cable
011609-8000	Semi-Rigid	T-Flex® 402
011609-8001	Semi-Rigid	T-Flex® 405

T-Flex Cable is a registered trademark of Times Microwave Systems

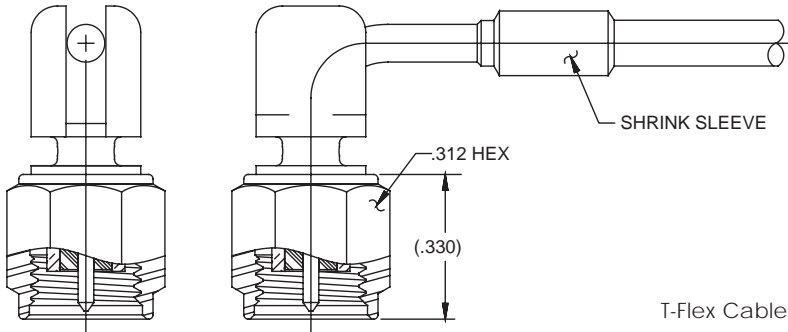
Straight SMA Plug



Part Number	Cable Type	Cable
011509-8000	Semi-Rigid	T-Flex® 402
011509-8001	Semi-Rigid	T-Flex® 405

T-Flex Cable is a registered trademark of Times Microwave Systems

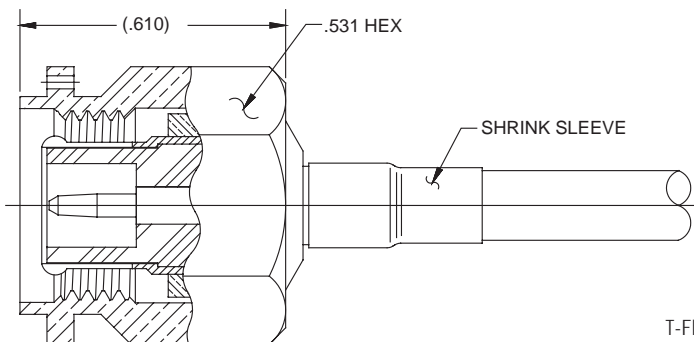
Right Angle SMA Plug (Torque Isolation Connector)



Part Number	Cable Type	Cable
011509-1002	Semi-Rigid	T-Flex® 402
011509-1003	Semi-Rigid	T-Flex® 405

T-Flex Cable is a registered trademark of Times Microwave Systems

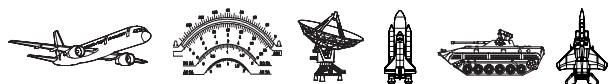
Straight TNC Plug



Part Number	Cable Type	Cable
011109-8000	Semi-Rigid	T-Flex® 402
011109-8001	Semi-Rigid	T-Flex® 405

T-Flex Cable is a registered trademark of Times Microwave Systems

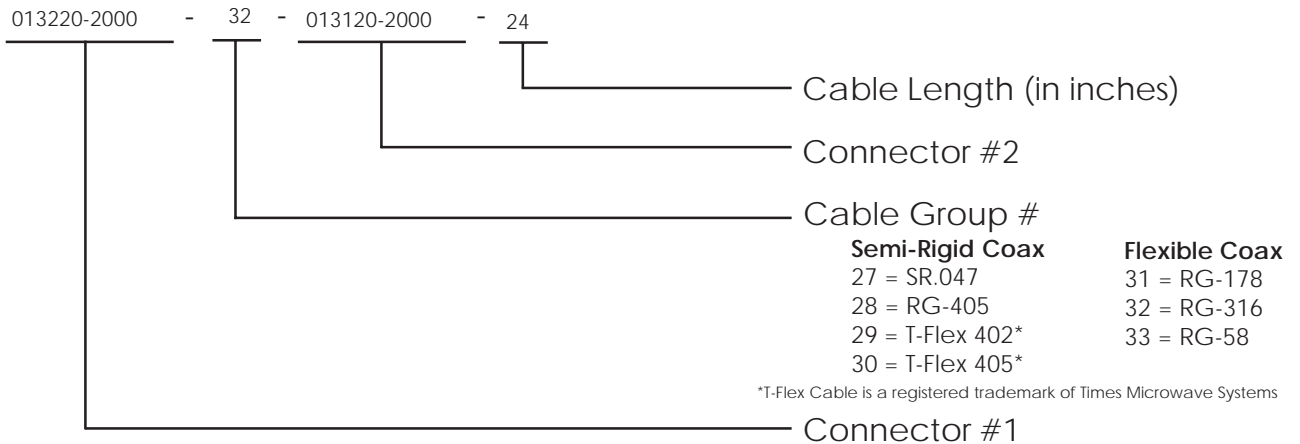
Note: T-Flex® cables can be terminated with Flexible alternatives to Semi-Rigid Coax Cables



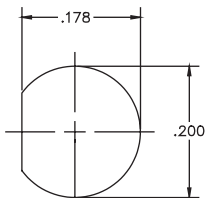


CABLE ASSEMBLY ORDERING INFORMATION

PART NUMBER ASSIGNMENT



Mounting D-Hole
(Bulkhead Connectors)



SAMPLE P/N: 013220-2000/32/013120-2000/24

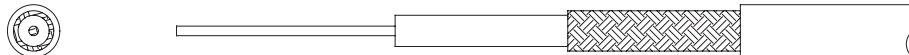


Please use the request for quote worksheet on page 225 to specify your custom application needs.



Semi-Rigid Coax Cables

Cable Group No.	Cable Designation	Impedance (OHMS)	Jacket	Inner Conductor
27	SR.047	50	0.047"	0.0362"
28	RG-405	50	0.0865"	0.0201"
29	T-Flex® 402	50	0.160"	0.036"
30	T-Flex® 405	50	0.104"	0.020"



Flexible Coax Cables

Cable Group No.	Cable Designation	Impedance (OHMS)	Jacket	Conductor
31	RG-178	50	0.071"	0.012"
32	RG-316	50	0.098"	0.0201"
33	RG-58	50	0.195"	0.0355"



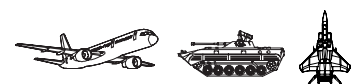
Grounded Circular Connector Series

Sabritec's grounded circular connector series are designed to ground the outer shield of a triax or coaxial contact directly to the shell of the connector. An innovatively designed multi-finger contact spring mechanism fixed within each metalized grounded connector cavity serves a dual purpose. It acts as a mechanically sound and well proven contact retention clip mechanism as well as a multi-finger contact engagement point for superior EMI shielding resulting in extremely low contact resistance values when measured from the coax or triax contact outer body to the connector flange. Contact resistance is 5 milliohms maximum.

All connector types are available including MIL-DTL-38999 Series I, II, and III, MIL-C-26482 Series II/MIL-DTL-83723 Series I square flange mount receptacles and plug connector assemblies. All Sabritec grounded circular connectors are intermateable and interchangeable with standard non-grounded connectors.

Features:

- ◆ Grounded multi-finger contact spring mechanism within each connector cavity
- ◆ Contact resistance: 5 milliohms max
- ◆ Intermateable and interchangeable with standard non-filtered connectors
- ◆ Superior EMI shielding
- ◆ Suitable for MIL-STD-1760 applications





GROUND PLANE CIRCULAR CONNECTORS

MULTIPIN CIRCULAR GROUNDED CONNECTORS

MIL-DTL-38999 GROUNDED CIRCULAR CONNECTORS

Sabritec's grounded circular connectors are designed for mixed signal, coax and triax circular connector insert arrangements. Metalized inserts containing multi-finger EMI ground spring fingers offer very low contact resistance while grounding coaxial and triaxial contacts without the need for labor intensive pig-tailing and outer PC tail grounding schemes. All ground plane connectors meet or exceed all applicable requirements of standard QPL Mil-Spec circular connectors.

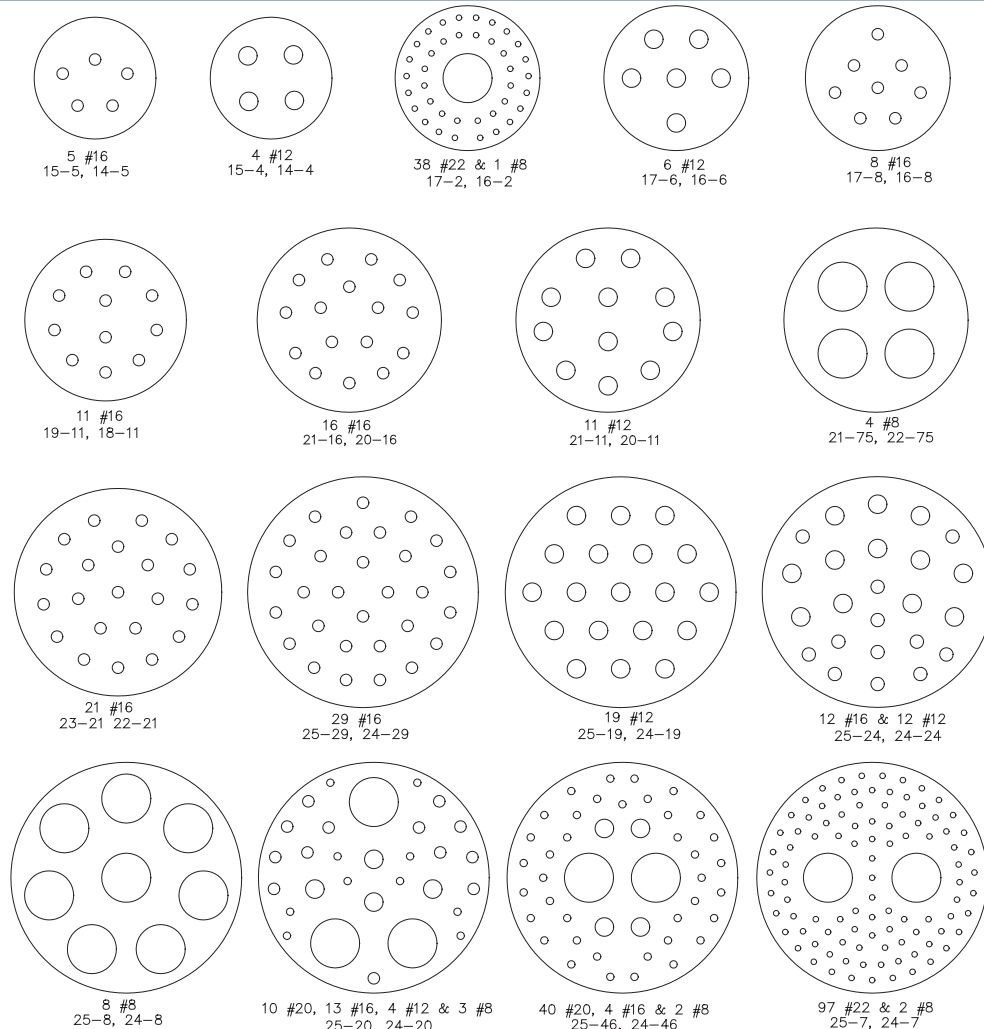
MATERIALS & FINISHES

Contacts	Brass per ASTM B16, gold plated per ASTM-B488, Type III, Class 1.25
Insert	Aluminum alloy, silver plated per ASTM B700
Shells	Aluminum alloy, consult factory for plating options
Grounded EMI Fingers	Beryllium copper per ASTM-B196, Alloy UNS C17300 Gold plated per ASTM-B488, Type III, Class 1.25

CONNECTOR TYPES

- ◆ MIL-DTL-38999 SERIES I
MS27505 Square Flange Receptacle
- ◆ MIL-DTL-38999 SERIES II
MS27499 Square Flange Receptacle
- ◆ MIL-DTL-38999 SERIES III
D38999/20 Box Mount Receptacle
- ◆ MIL-DTL-38999 SERIES IV
D38999/40 Box Mount Receptacle
- ◆ MIL-C-26482 SERIES II
MS3470 Square Flange Receptacle

Insert Arrangements



Compliant Pin Coaxial Connectors

Sabritec's SCX Compliant Pin coaxial connectors allow for a solderless press-fit termination into standard plated-thru holes. A 50-ohm characteristic impedance is maintained throughout the connector body offering the utmost in RF performance in compliant pin termination. With a solderless termination, PCB connectors can be easily stacked on both sides of the circuit board.

The compliant pin coaxial connector line offers supreme RF performance in a press-fit termination package. These connectors press-fit into a standard 1mm plated-thru hole. The compliant pin utilizes an eye of the needle concept with heat-treated beryllium copper spring fingers finished with gold plating and shear forces. The connector assembly can be removed from the PCB up to three (3) times without lowering the insertion/extraction force of the attachment to the PCB.



Compliant Pin RF Connectors

Features:

- Complete repairability
- Ease of rework to the PCB without damaging solder pad connection
- Eliminates flux and hazardous flux removal systems
- Available in .200" standard footprint spacing
- Press-fit into .040" dia. +/- .003" plated-thru holes
- Stack PCB connectors on both sides of the circuit board

Coaxial End Launch Connectors/Blind-Mate Applications

Sabritec's RF End-Launch SCX connectors offer ease of mounting to the PCB with exceptional board retention far exceeding excessive mating and shear forces without the need for plated through hole mounting. The connector is mounted or launched directly off the end of the PCB without the use of costly right angle, through hole termination methods. The SCX series offers plug and receptacle end-launch configurations as well as a unique blind mate/float mount SCX receptacle for multiple gang mating board to board interconnect applications.



Coaxial End Launch Connectors

Features

- Designed for standard .062" thick circuit boards
- .015" full radial float mount design
- Multiple blind-mate gang mating possibilities
- Ideal for low profile circuit card to mother board interconnect schemes