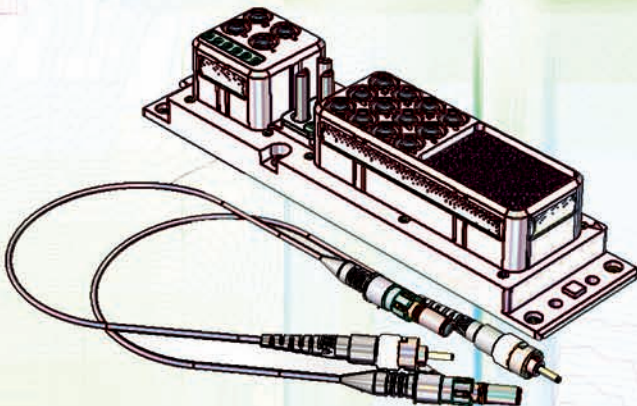
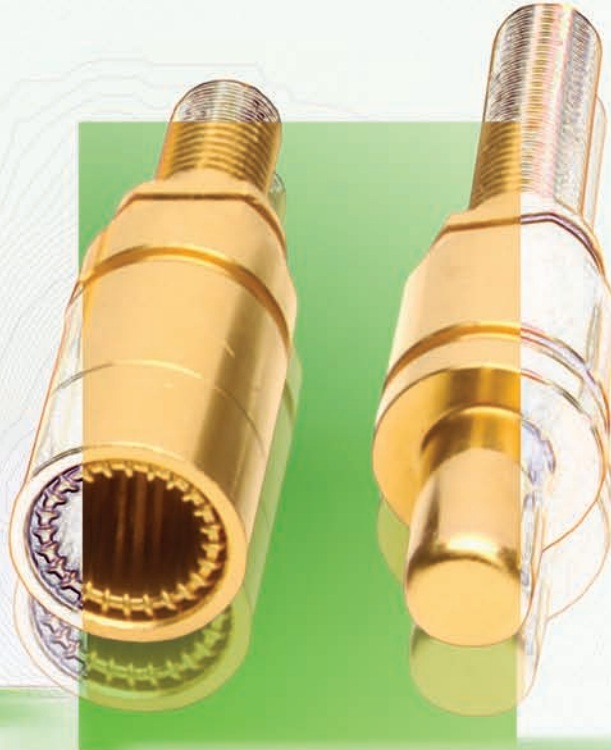
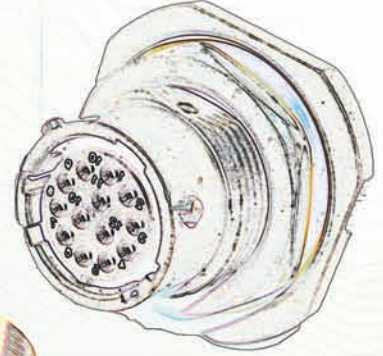
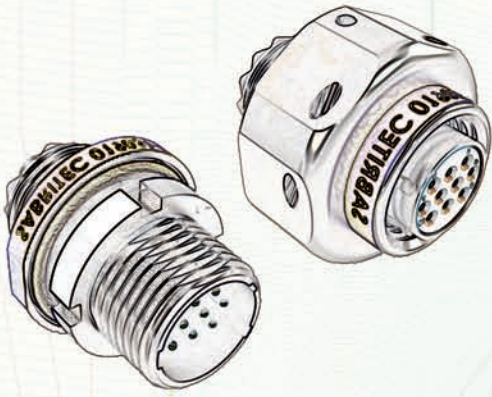


HIGH POWER/HIGH DENSITY CONNECTORS SPECIALS/CUSTOM INTERCONNECTS CABLE ASSEMBLIES



HIGH POWER / HIGH DENSITY / CUSTOM INTERCONNECTS / CABLE ASSEMBLIES



High Power Connectors

Overview and Contact Performance

Sabritec's High Power connectors utilize the superior performing Hyperboloid® contact technology, ideal for harsh and demanding environments with low contact resistance. These connectors provide high current ratings with smaller contacts for the same power thus saving overall weight and space.

Key Features:

- Low coupling force
- Improved low rate of wear and high coupling durability
- Shock and vibration resistance
- Operate in harsh environments
- Increased power handling capability by 25% as compared to standard contacts
- Reduced contact resistance
- Contact elements can be insulated, to enable multi-pole use (coaxial)
- Contact mating sequence can be used to gain benefits such as power switching
- Mating of shorter contact can energize main power for system or safety requirements

Contact Mechanical & Environmental Specifications	
Contact Endurance	Contact Mating Cycles >1000
Operating Temperature	-65°C to +150°C
Connector Materials and Finishes	
Shell	Aluminum Alloy, Stainless Steel, Composite
Contacts	Copper Alloy, Gold Over Nickel
Inserts	Glass Filled Thermoplastic or Epoxy
Seals & O Ring	Fluorosilicone Rubber



Hyperboloid® Performance vs MIL-C-39029

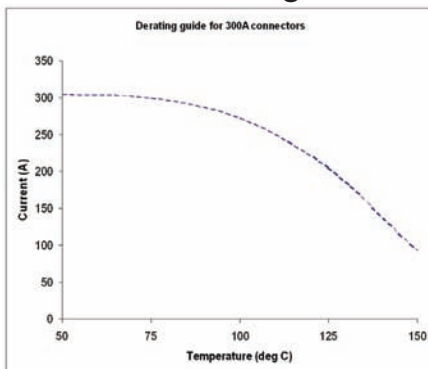
Pin Size	Pin Diameter, mm (in)	Socket OD maximum, mm (in)	MIL Spec Current Rating Continuous, A	Hyperboloid® Contact Current Rating Continuous, A	Hyperboloid® Contact Resistance Typical, mΩ	Hyperboloid® Contact Resistance Maximum, mΩ
8	3.61 (0.142)	6.50 (0.256)	46	60	0.20	.50
4	5.72 (0.225)	9.53 (0.375)	80	100	0.10	.50
0	9.07 (0.357)	13.35 (0.526)	150	300	0.10	.20
00	10.31 (0.406)	18.55 (0.730)	185	300	0.07	.20
0000	12.70 (0.500)	21.02 (0.828)	225	500	0.05	.10

Mating Cycles (Durability):

MIL-Spec = 500

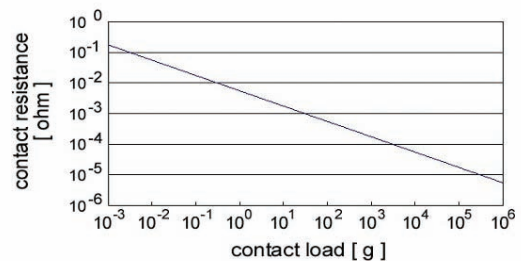
Hyperboloid® Equivalent = 5,000

Current Derating Curve



De-rating guide for power connectors used at elevated temperatures. Cable and / or busbar type and installation arrangements need to be considered in applying this data.

Contact Resistance vs. Load





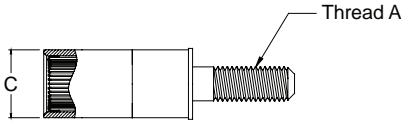
High Power Connectors and Contacts

High Power Socket Contact Termination Styles

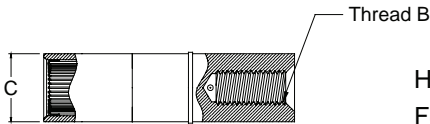
High Power Contact Terminations



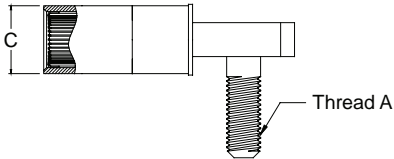
Hyperboloid Contact with Wire Crimp Termination



Hyperboloid Contact with Male Threaded Post Termination



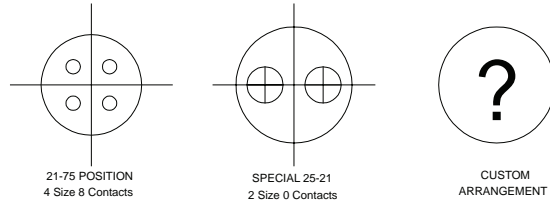
Hyperboloid Contact with Female Threaded Termination



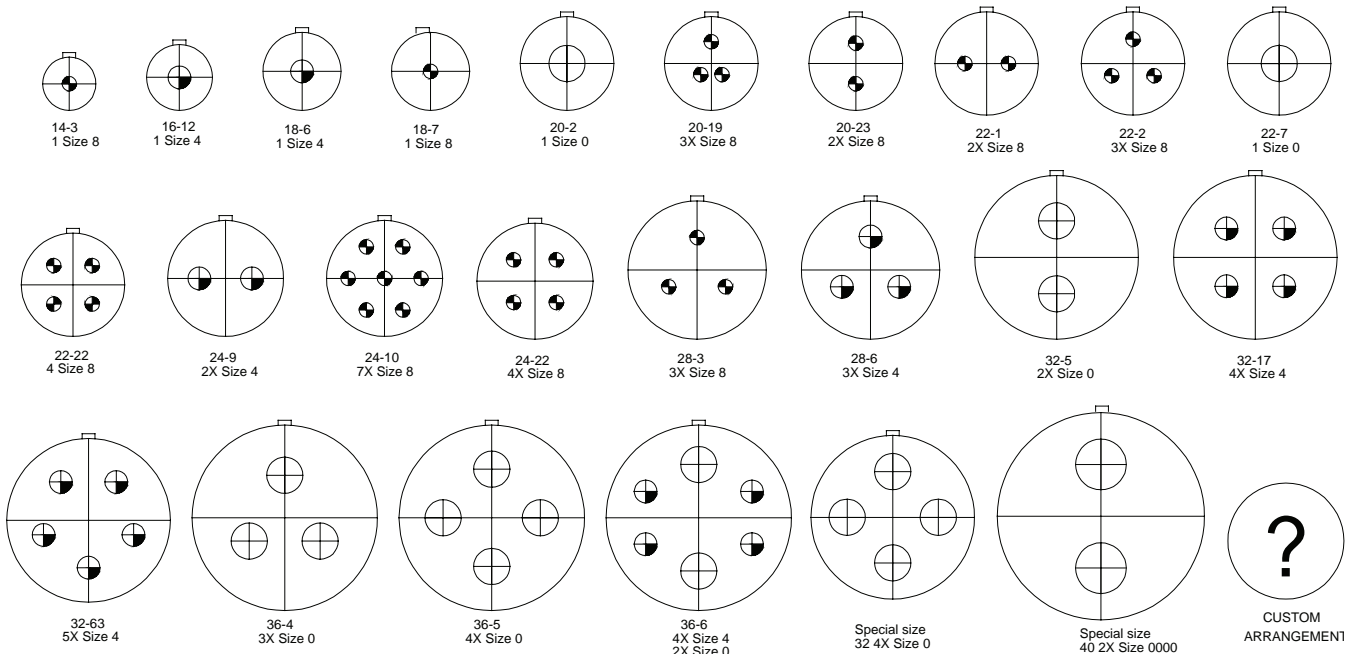
Hyperboloid Contact with R/A Thread Post (Male, Female or Crimp Termination)

Contact Dimensions				
Contact Size	A Thread	B Thread	C Max	E Max
8	1/4-20 UNC-2A	1/4-20 UNC-2B	.256	.182
4	3/8-16 UNC-2A	3/8-16 UNC-2B	.375	.283
0	9/16-12 NC-2A	9/16-12 UNC-2B	.526	.455
00	5/8-11 UNC-2A	5/8-11 UNC-2B	.730	.500
0000	3/4-10 UNC-2A	3/4-10 UNC-2B	.828	.641

MIL-DTL-38999 Connector Insert Arrangements



MIL-DTL-5015 Connector Insert Arrangements

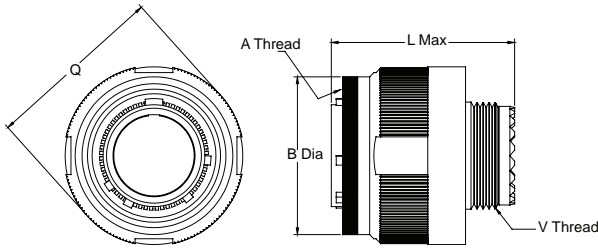




High Power Connector Housing

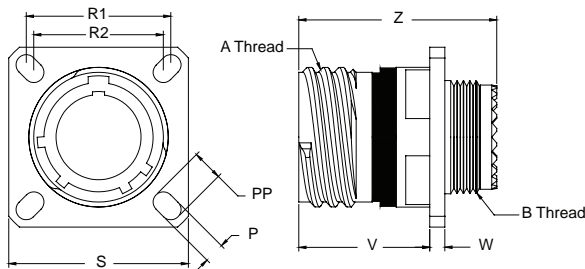
MIL-DTL-38999 and MIL-DTL-5015 Connector Styles

MIL-DTL-38999/26 Plug (Series III Shown)



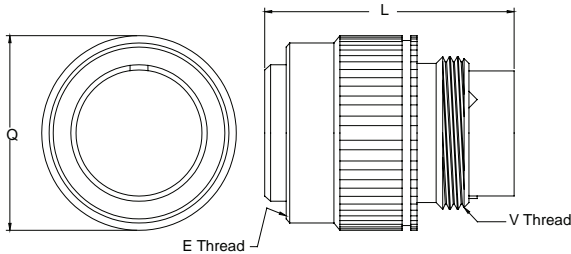
Dimensions					
Shell Size	A Thread .1 Pitch .3 Lead	B + .008 - .000	L Max	Q Dia. Max	V Thread Metric
21	1.375	1.500	1.235	1.642	M31X1
25	1.625	1.744	1.235	1.890	M37X1

MIL-DTL-38999/20 or 24 Receptacle (Series III Shown)



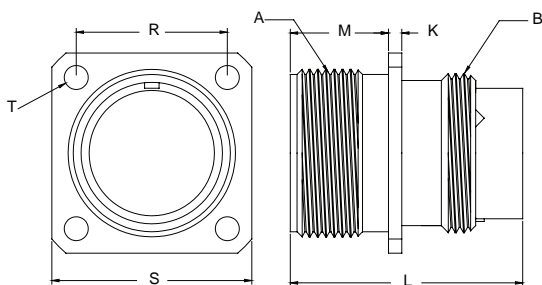
Dimensions										
Shell Size	A Thread .1 Pitch .3 Lead	P ± .008	PP ± .008	R1	R2	S	V Max	W Max	Z + .005 - .010	B Thread Metric
21	1.375	0.154	0.242	1.250	1.156	1.563	0.790	0.126	1.235	M31X1
25	1.625	0.154		1.500	1.375	1.811	0.790	0.126	1.235	M37X1

MIL-DTL-5015 Plug



Dimensions				
Shell Size	E Thread Class 2A	Q Dia Max	L Max	V Thread Class 2A
14	7/8-20 UNEF	1.156	2.100	7/8-20 UNEF
16	1-20 UNEF	1.25		1-20 UNEF
18	1 1/8-18 UNEF	1.344		1 1/16-18 UNEF
20	1 1/4-18 UNEF	1.469		1 3/16-18 UNEF
22	1 3/8-18 UNEF	1.594	2.250	1 5/16-18 UNEF
24	1 1/2-18 UNEF	1.719		1 7/16-18 UNEF
28	1 3/4-18 UNS	1.969		1 3/4-18 UNS
32	2-18 UNS	2.219		2-18 UNS
36	2 1/4-16 UN	2.469		2 1/4-16 UN
40	2 1/2-16 UN	2.719		2 1/2-16 UN
44	2 3/4-16 UN	2.969		2 3/4-16 UN
48	3-16 UN	3.219		3-16 UN

MIL-DTL-5015 Receptacle



Dimensions								
Shell Size	A Thread Class 2A	K ± .015	L Max	M + .031 - .000	R	S	T Dia + .005 - .000	B Thread Class 2A
14	7/8-20 UNEF	0.083	2.100	0.75	0.906	1.188	0.115	7/8-20 UNEF
16	1-20 UNEF				0.969	1.281		1-20 UNEF
18	1 1/8-18 UNEF				1.062	1.375		1 1/16-18 UNEF
20	1 1/4-18 UNEF				1.156	1.500		1 3/16-18 UNEF
22	1 3/8-18 UNEF	0.125	2.250	0.812	1.250	1.625	0.142	1 5/16-18 UNEF
24	1 1/2-18 UNEF				1.375	1.750		1 7/16-18 UNEF
28	1 3/4-18 UNS				1.562	2.000		1 3/4-18 UNS
32	2-18 UNS				1.750	2.250		2-18 UNS
36	2 1/4-16 UN				1.938	2.500		2 1/4-16 UN
40	2 1/2-16 UN				2.188	2.750		2 1/2-16 UN
44	2 3/4-16 UN				2.375	3.000		2 3/4-16 UN
48	3-16 UN				2.625	3.250		3-16 UN



High Power Connector Ordering Information

Part Description Code for High Power Connectors/Contacts

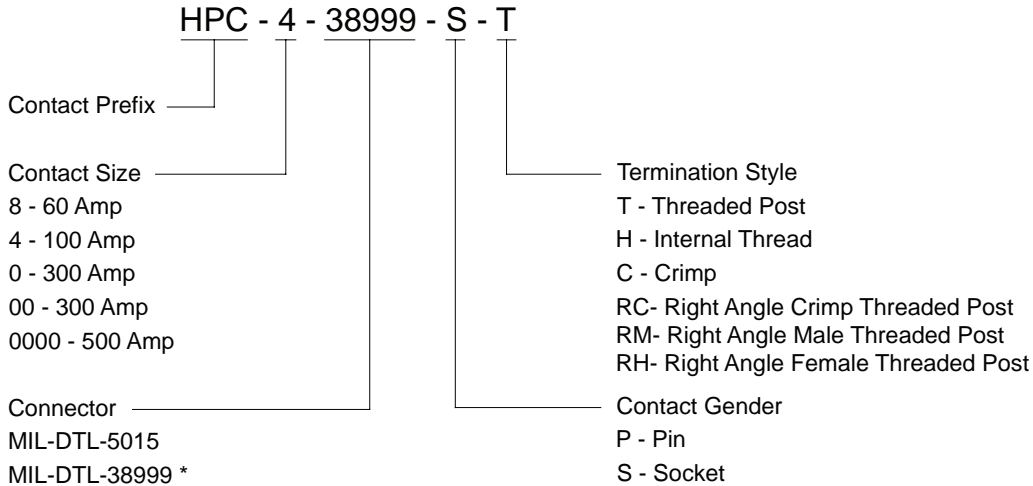
Sabritec also provides rack and panel power and combo layout solutions. A hybrid configuration consisting of 3 phase power that can be combined with integrated signal, fiber optic, coax, triax and high speed quadraX inserts within a single panel solution. Accessory hardware is available with custom backshells and power modules exceeding 500 A current ratings.

Buss bars are attached to the threaded end of the connector pin or socket contact or standard cable crimp terminations for power cable AWG ratings with current ratings up to 500 Amps in a single contact. Blindmate or screw lock accessory hardware configurations are offered for any rack and panel solutions in a variety of sizes and configurations.

Complete 360 Degree RF connector shielding with EMI ground spring fingers integrated into each connector shell arrangement and cavity is also available. Modularity is key to the design with interchangeable insert assemblies available for an array of signal, power and hybrid contact reverse gender configurations.

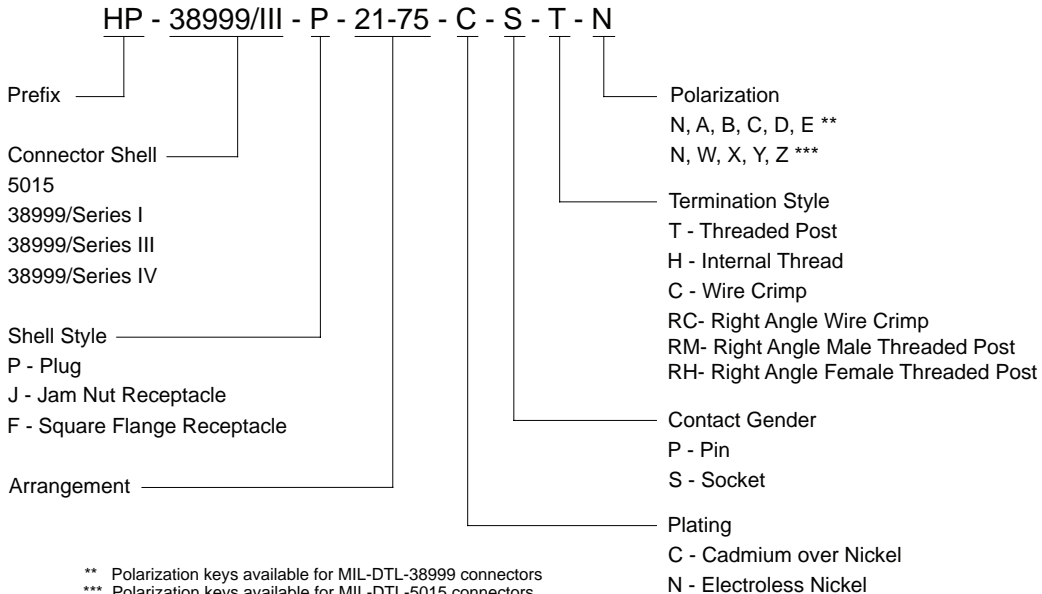


Power Connector Part Number Description Code



* Contacts are only available for Series I, III and IV

Power Contact Ordering Information



** Polarization keys available for MIL-DTL-38999 connectors

*** Polarization keys available for MIL-DTL-5015 connectors



High Density Mini Circular Connectors (HDMC)

Sabritec's new High Density Miniature Circular Connectors (HDMC) series offers the performance of a MIL-DTL-38999 connector in a smaller size with significant weight savings. The HDMC is offered with Size 23 crimp removable contacts, Size 12 High Frequency Coax (MDHC) contacts, Size 10 High Speed Twinax and rugged Fiber Optic signaling.

MDHC high frequency coaxial contacts have a frequency range up to 40 GHz and offer a low VSWR (1.3:1 typical up to 30 GHz and 1.5:1 typical up to 40 GHz) per mated pair.



HDMC Connector Features/Benefits

- Meets or exceeds electrical and environmental performance criteria for MIL-DTL-38999 style connectors
- Shell size 7 offers 10 Crimp Removable Size 23 Crimp contacts or 1 Size 12 MDHC high frequency coax contact
- Greater than 50% space saving compared to MIL-DTL-38999 Shell Size 9
- Increased signal density by 40% compared to MIL-DTL-38999 Shell Size 9
- Offers 70% in weight reduction compared to MIL-DTL-38999 Shell Size 9
- Compatible with industry standard backshells
- Various styles and features to suit a wide variety of applications
- Consult factory for other insert arrangements and contact styles

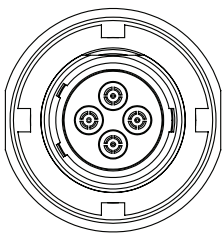
Material & Finishes	
Center & Outer Contacts	Brass per ASTM-B16, Alloy UNS C36000 or BeCu per ASTM-B196, Alloy UNS C17200, C17300 Gold Plate per ASTM-B488, Type II, Class 1.25
Jam Nut	Aluminum Alloy
Grommet & Interfacial Seal	Silicon base elastomer
Insulators	High grade plastic/epoxy resin
Plug & Receptacle Shells	Aluminum per ASTM-B211/221, 6061-T6 Electroless Nickel Plate per SAE-AMS-C-26074 or CAD per QQ-P-416

Electrical Specifications	
Dielectric Withstanding Voltage	500 VRMS @sea level with 70% relative humidity
Insulation Resistance	MDHC: 1000 mega-ohms min. @ 250 VDC Size 23 Signal: 5000 megohms min.
Contact Current Rating	5 Amps max. for 0.030 Signal Pins 2.0 Amps max. for 0.015 Signal Contacts
Magnetic Permeability	2.0 max.
Frequency Range (MDHC)	DC-40 GHz
VSWR (MDHC)	MDHC 1.5:1 (typ) Mated Pair up to 40 GHz 1.3:1 (typ) Mated Pair up to 30 GHz

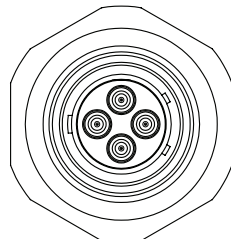
Alternate Shell Sizes with Multiway RF and High Speed Insert Patterns

A wide variety of high density space saving shell sizes containing multiple high speed twinax, high frequency coax, shielded triax and EMI filtered layouts are available. Please consult factory for more information on alternate shell sizes and layouts.

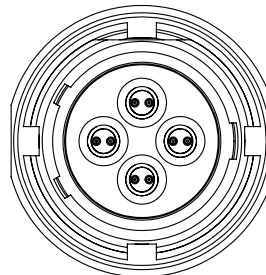
Alternate Sample Arrangements:



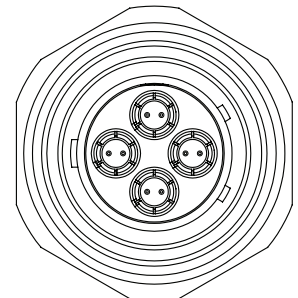
Alternate HDMC Receptacle with 4 MDHC Coax Pin Contacts



Alternate HDMC Plug with 4 MDHC Coax Socket Contacts



Alternate HDMC Receptacle with Size 10 Twinax/Quadrax Pin Contacts



Alternate HDMC Plug with Size 10 Twinax/Quadrax Socket Contacts

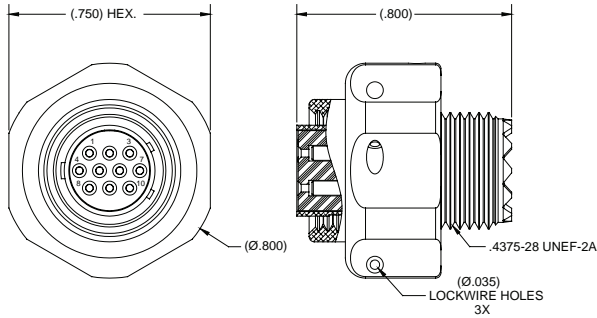
See Page 138 for MDHC Coax Contact details and page 54 for Size 10 High Speed Twinax Contact details.



HDMC Connectors Shell Size 7

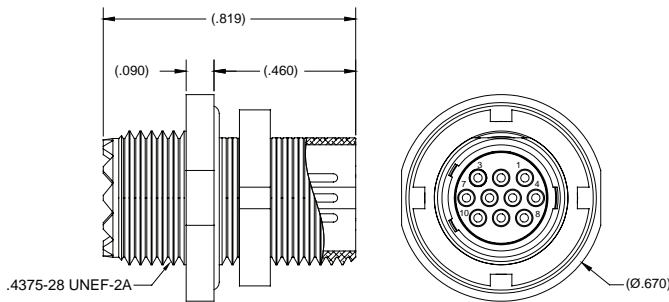
HDMC Connectors with Size 23 Signal and MDHC Contacts

HDMC Connector Plug with Size 23 Socket Crimp Contacts



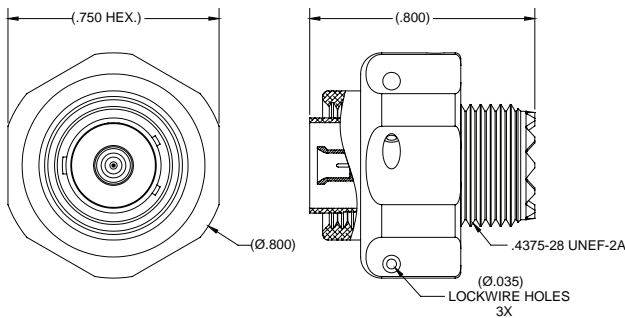
P/N 019032-2000

HDMC Connector Receptacle with Size 23 Pin Contacts



P/N 019031-2000

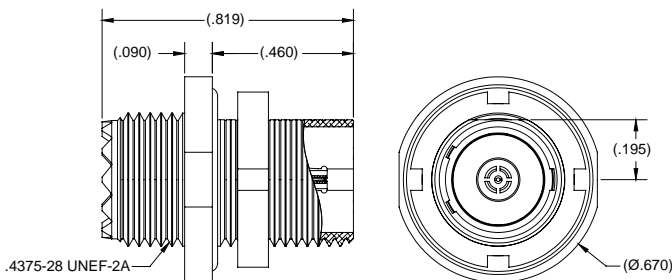
HDMC Connector Plug with High Frequency 40 GHz Coax (MDHC) Socket Contact



P/N 019032-2002

RF Coaxial contacts are sold separately. See page 157 for contact ordering information

HDMC Connector Receptacle with High Frequency 40 GHz Coax (MDHC) Pin Contact



P/N 019031-2002

RF Coaxial contacts are sold separately. See page 157 for contact ordering information



Cable Assemblies & Custom Interconnects

Value Added Cable Assemblies

All cable assemblies are subjected to mechanical visual and dimensional inspections, thus ensuring a dependable and reliable rugged cable assembly. Sabritec cable assemblies are tested for electrical or optical characteristics. Product quality, reliability and on-time delivery are essential to all of Sabritec's products. Please contact our applications engineering department for more information.

Custom Interconnects

Sabritec's expertise is precision design and manufacturing of electronic interconnect systems. Our engineers work directly with customers to develop unique solutions that address specific customer needs and industry requirements. The combination of engineering talent and in-house manufacturing capabilities, such as 3D solid modeling, high precision machining, injection molding and complete assembly to provide customers with quick turnaround on custom designs.

We can easily modify standard products and/or create completely unique designs from start to finish. If you have the need for a custom product, please contact us with any questions or specifications. We look forward to assisting you in every way possible.

Water Sealed Connectors

Electronic equipment that is used in harsh environments requires connectors that can withstand exposure to moisture, dust and other elements. Also many applications require components to meet the Ingress Protection (IP) rating of IP67. Sabritec has developed water sealed connectors that can be successfully used in systems where moisture, humidity, water, and dust are present. The Sabritec design method is capable of sealing up to 35 psi in the unmated, open faced condition. These connectors are ideal for high-pressure/low leakage applications in land, air, sea, and space environments. The water sealed connector features can be added to both filtered and non-filtered multipin connectors, coaxial, triaxial, and high speed copper connector types.

Circular, Rack and Panel and D-subminiature Types

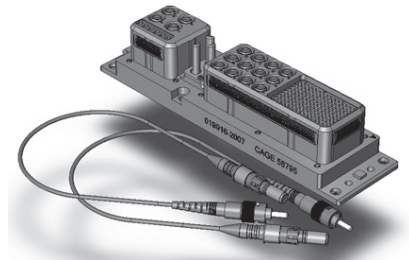
Sabritec has incorporated this water sealed technology in connector types that meet the requirements of most connector standards including MIL-DTL-38999, MIL-DTL-26482, MIL-DTL-83527, MIL-DTL-81659, and ARINC 600. These connectors can be designed to fit the envelope of the specification standard or can incorporate any special features desired including different mounting types, unique shell or flange configurations, or EMI/EMP filtering.

Customer Defined Specialty Connector Types

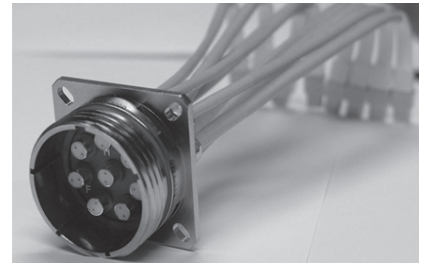
Sabritec also provides water sealed capabilities to connectors that do not conform to any connector standard but are application specific designs as defined by unique interface requirements. Along with being sealed in the unmated condition, these connectors can also incorporate threaded inserts, hybrid contact configurations (power, signal, coaxial, triaxial, and high speed), custom housing configurations, EMI/EMP filtering, and value added cable assemblies.



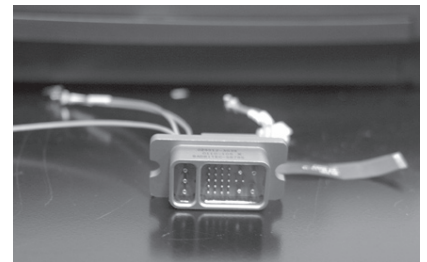
Filtered Coaxial Switching Connector



ARINC 600 Connector with Expanded Beam Cable Assemblies



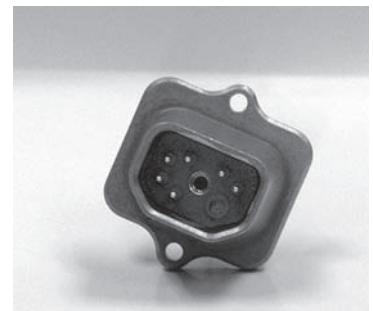
MIL-DTL-38999 Twinax Connector with Value Added Cable Assembly



Water Sealed Hybrid Connector with Coax, Power and Signal Contacts



MIL-DTL-38999 Compliant Water Sealed Connector



GPS Connector

Sabritec provides specialty, enhanced performance connectors and cable assemblies and as such does not currently offer circular, rack and panel, or D-subminiature connectors that are listed on military standard Qualified Products Lists (QPL) per applicable detail specification sheets. Sabritec's connectors are fully interchangeable with applicable QPL products and meet the applicable requirements of all military standards listed in this catalog.