



High Power Connectors

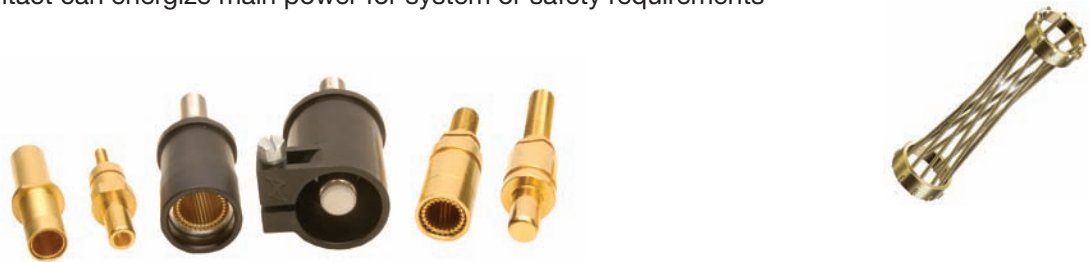
Overview and Contact Performance

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

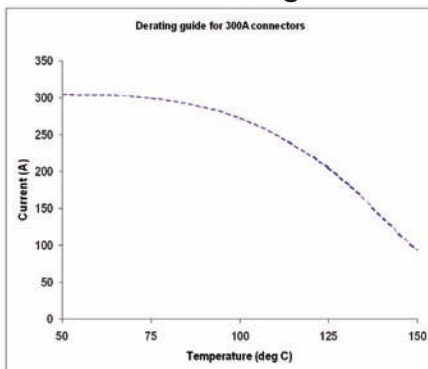
Pin Size	Pin Diameter, mm (in)	Socket OD maximum, mm (in)	MIL Spec Current Rating Continuous, A	Hyperboloid® Contact Current Rating Continuous, A	Hyperboloid® Contact Resistance Typical, mΩ	Hyperboloid® Contact Resistance Maximum, mΩ
8	3.61 (0.142)	6.50 (0.256)	46	60	0.20	.50
4	5.72 (0.225)	9.53 (0.375)	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

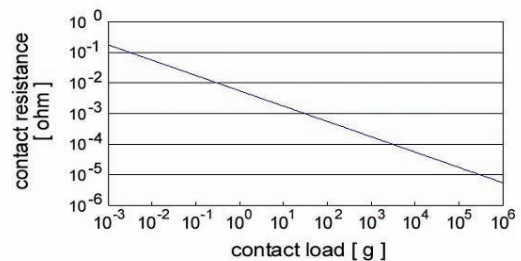
Hyperboloid® Equivalent = 5,000

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





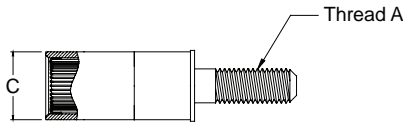
High Power Connectors and Contacts

High Power Socket Contact Termination Styles

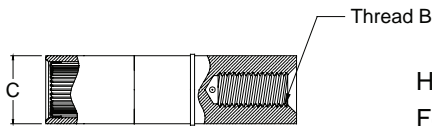
High Power Contact Terminations



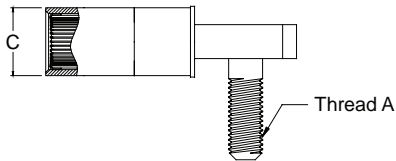
Hyperboloid Contact with Wire Crimp Termination



Hyperboloid Contact with Male Threaded Post Termination



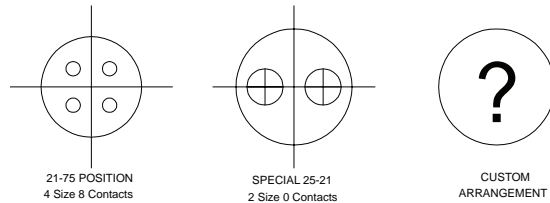
Hyperboloid Contact with Female Threaded Termination



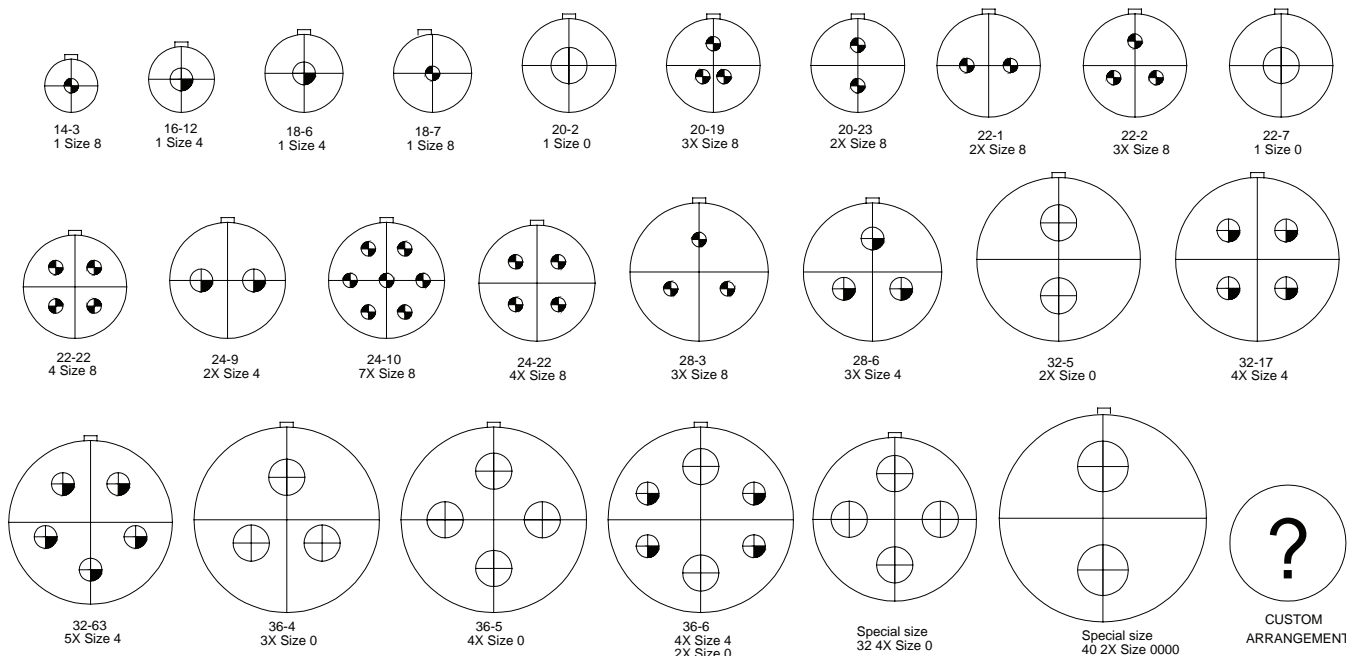
Hyperboloid Contact with R/A Thread Post (Male, Female or Crimp Termination)

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

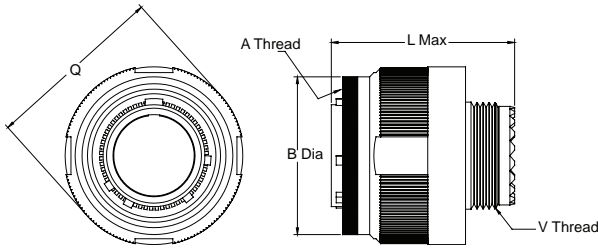




High Power Connector Housing

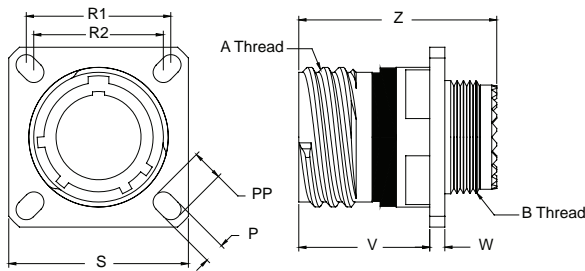
MIL-DTL-38999 and MIL-DTL-5015 Connector Styles

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



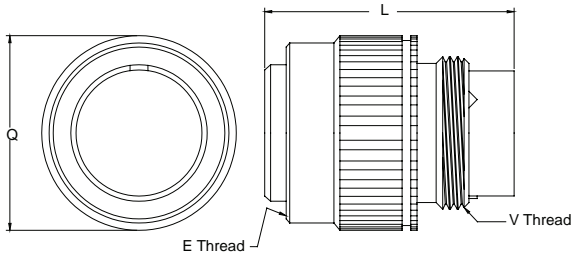
Dimensions					
Shell Size	A Thread .1 Pitch .3 Lead	B + .008 - .000	L Max	Q Dia. Max	V Thread Metric
21	1.375	1.500	1.235	1.642	M31X1
25	1.625	1.744	1.235	1.890	M37X1

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



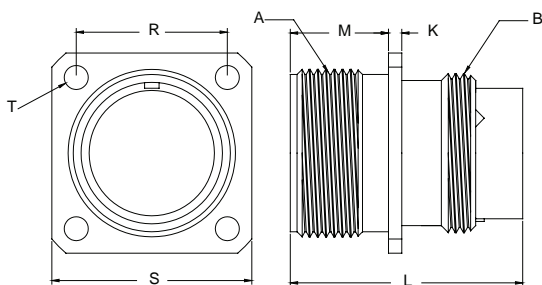
Dimensions										
Shell Size	A Thread .1 Pitch .3 Lead	P ± .008	PP ± .008	R1	R2	S	V Max	W Max	Z + .005 - .010	B Thread Metric
21	1.375	0.154	0.242	1.250	1.156	1.563	0.790	0.126	1.235	M31X1
25	1.625	0.154		1.500	1.375	1.811	0.790	0.126	1.235	M37X1

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

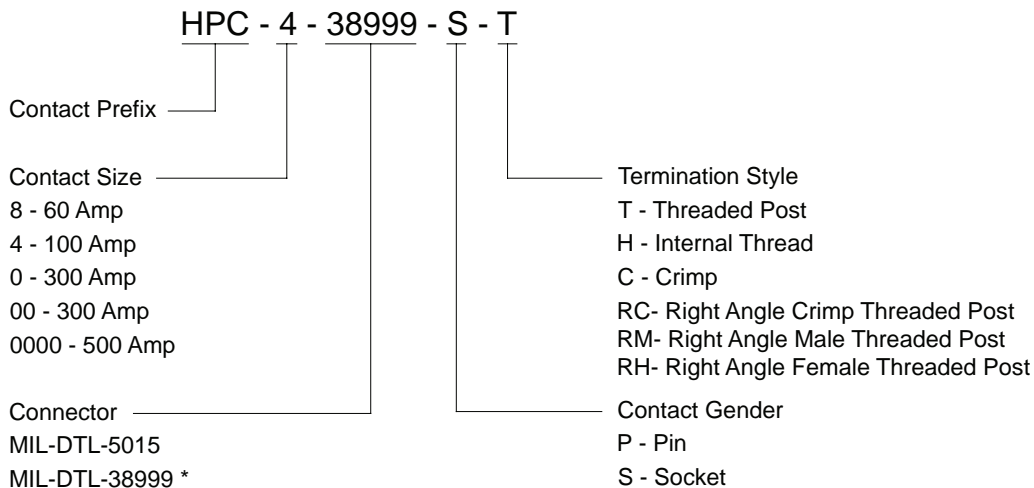
Sabritec also provides rack and panel power and combo layout solutions. A hybrid configuration consisting of 3 phase power that can be combined with integrated signal, fiber optic, coax, triax and high speed quadrax inserts within a single panel solution. Accessory hardware is available with custom backshells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

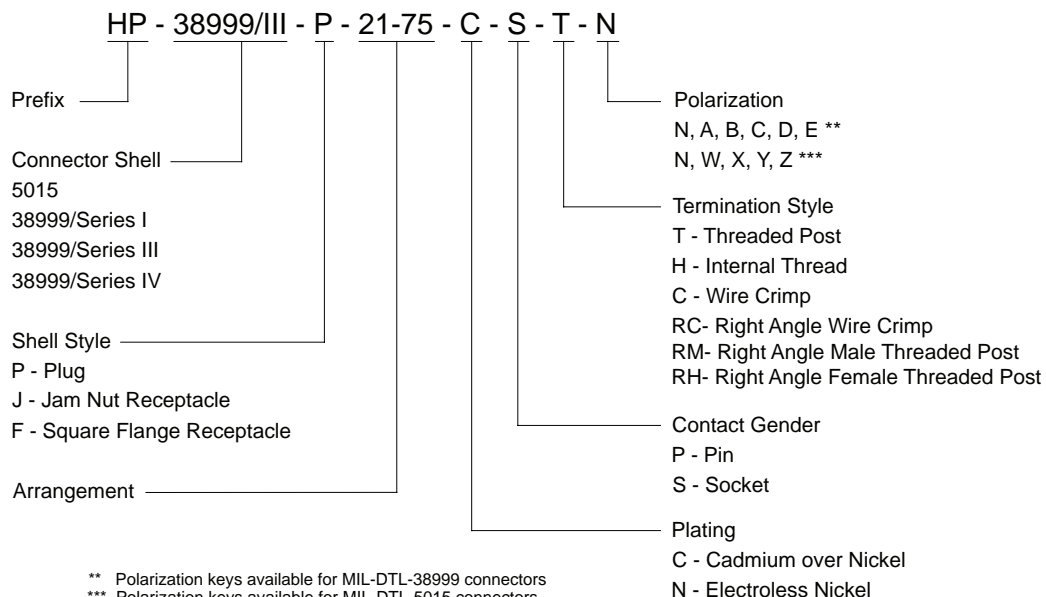


Power Connector Part Number Description Code



* 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