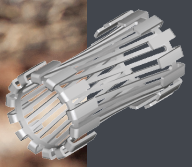
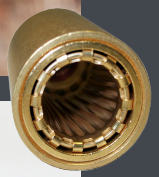
Amphenol
Aerospace

High POWER CONNECTORS

For High Current and High Temperature Environments





Contacts

5015
Power

RADSOK
Temper-GRIP

38999
Tri-Power

CARE

Customer-Centric:
Our **#1 priority** is our customers who deserve quality product on time.

Accountable:
Clear owners, clear actions, clear results.

Reliable:
What we build matters and quality is imperative.

Enthusiastic:
Challenges create rewarding opportunities. Enthusiasm is contagious and we will spread it.

Quality Assurance:
Amphenol Aerospace has been awarded both AS9100 - Revision C and ISO9001:2008 Quality Assurance Certifications.

Table of Contents

Table of Contents

Contacts

High Power 5015

Tri-Power 38999

High Power 5015 Series Introduction

Male threaded post termination PKT02RFM36-5P

Shown Left: Box mount with solder cup contacts PKB02RWP22-22P
Shown Right: Plug with crimp removable Temper-Grip Contacts PKB06RWC22-22T

Models and drawings available online at www.amphenol-aerospace.com by selecting the configurator tool.

Amphenol has revolutionized its standard power connector offerings with advanced contact technology and new contact termination methods resulting in unrivaled catalog customization.

Utilizing two proven connector interfaces (Matrix 5015 and GT-5015) and a host of tooled insert arrangements, Amphenol has a connector for every high power application.

DESIGN CHARACTERISTICS

- 40-50% increased current carrying capability over standard 5015 connector
- Threaded or bayonet coupling available
- Catalog customization reduces design-in time
- Standard interfaces allow users to utilize existing cabling design where high performance is needed
- Gold plated contacts mean higher performance in demanding environments

CUSTOMER OPTIONS

- Contact termination methods including crimp, male and female threaded termination, solder, PCB and bus-bar
- Epoxy backfilled options for increased environmental performance where needed
- Socket contact options include the low resistance RADSOK® technology and Amphenol's new TEMPER-GRIP contact for high current carrying capability at over 200°C
- Over 25 tooled insert arrangements for current carrying capacity from 50 to nearly 1000 amps per connector
- Standard and proprietary plating options including Durmalon, Amphenol's Nickel Teflon plating which is RoHS/Reach compliant and can handle 500 hours of salt spray exposure
- Customizable - If you require any special mechanical or electrical configurations that are not listed within, please contact the factory for a quick-turn custom design

APPLICATIONS

- Hybrid-drive/electric vehicles
- Laser power systems
- Ruggedized power converters
- And many more

SHOCK

Wired, mated connectors are subjected to one shock in each of three mutually perpendicular axes with pulse of an approximate half sine wave of 50g magnitude
for a duration of 11 milliseconds. All contacts wired in series circuit with 100 ±10 Milliamperes of current flow.

OPERATING TEMPERATURE RANGE

Classes RF, RL, and DS have temperature range of
–55°C (–75°F) to 200°C (392°F)
Classes RW, DT, & DZ have temperature range of
–55°C (–75°F) to 175°C (347°F)

ENVIRONMENTAL SEAL

Wired, mated connectors with environmental accessories attached as required, will meet the altitude immersion test specified in MIL-DTL-5015. Backfilled connector options offer increased sealing in the unmated condition.

DURABILITY

Minimum of 100 mating cycles. For higher durability RADSOK® contacts are recommended.

CLASS DESCRIPTIONS

Military	Finish	RoHS	Material/ Description
RF	Electroless Nickel	✓	Aluminum, 200°C*, 48 hour salt spray
RK	Passivated Stainless Steel	✓	200°C*, 500 hour salt spray
RL	Stainless Steel w/ Nickel Plate	✓	Corrosion resistant steel, 200°C*, 500 hour salt spray
RW	Olive Drab Cadmium		Aluminum, 175°C* , 500 hour salt spray
DT	Durmalon plated	✓	Nickel-PTFE alternative to Cadmium, 175°C*, 500 hour salt spray
DZ	Zinc-Nickel Plated	✓	Zinc-Nickel Alternative to Cadmium, 175°C*, 500 hour salt spray (Not available in size 36)
DW	Thick Olive Drab Cadmium		Thick O.D. CAD, 175°C* , 500 hour salt spray
DS	AP-93	✓	Tri-Nickel Alloy, Aluminum, 1000 hour salt spray

*Utilizing the Temper-Grip sockets

PERFORMANCE SPECIFICATIONS

VOLTAGE RATING/SERVICE RATING						
Altitude	Inst.	A	D	E	B	C
Sea Level	1000	2000	2800	3500	4500	7000
50,000 ft.	400	600	675	750	825	975
70,000 ft.	260	360	400	440	480	560
110,000 ft.	200	200	200	200	200	200

High Current Pin Contacts

Amphenol is now offering high current pins that can be ordered with any Amphenol connector.

Using high conductivity alloys and precision machining Amphenol has developed a high current pin to reduce power loss in your application. Push the current carrying capability past the limits of a Mil-Spec contact, or simply improve the efficiency of your system while reducing the heat dissipated into your platform.

FEATURES AND BENEFITS:

- Fully interchangable with M39029 pins
- Available in any Amphenol connector series*
- 10%-20% improved ampacity

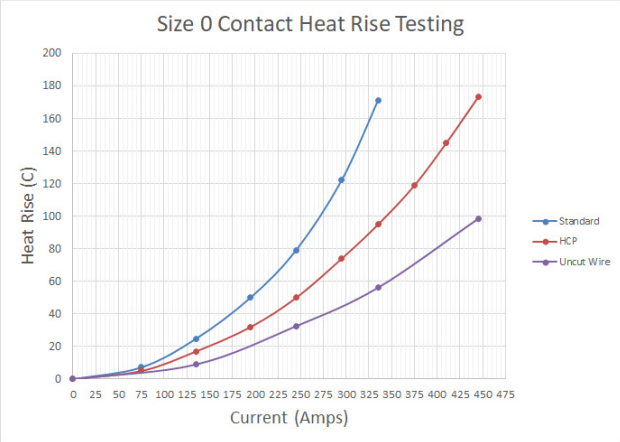
Replacing your contacts with HCP contacts will improve your performance, but you can improve your performance even more by replacing your sockets too. Using Temper-Grip sockets with HCP contacts provides a viable solution for applications up to 220'C. Heat rise data for HCP contacts used with Temper-Grip sockets is listed on the following page.

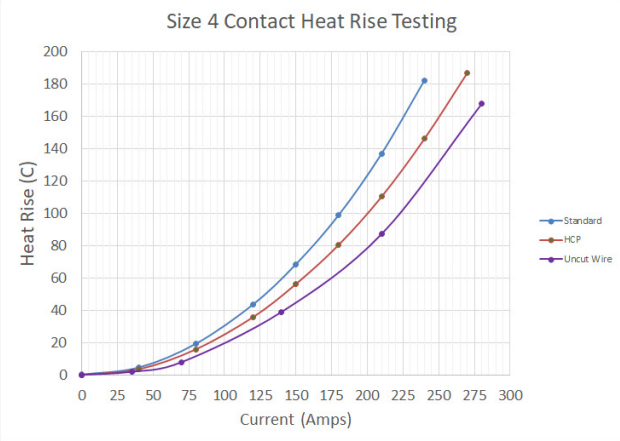
High Current Pin Heat Rise Testing Data

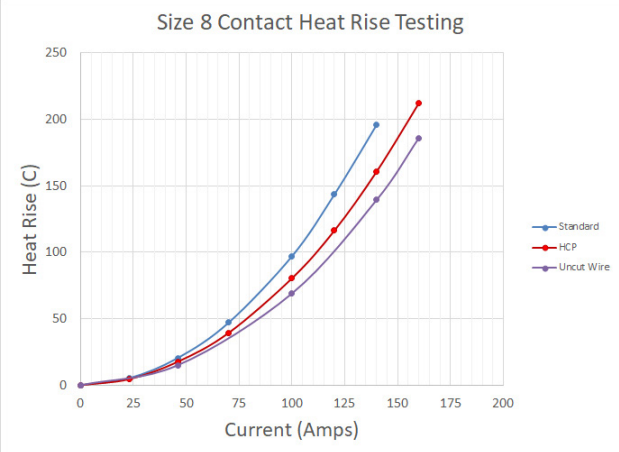
Amphenol Aerospace

Heat rise data shows performance of HCP (High Current Pins) compared to standard mil-spec pins and sockets. HCP sizes 0,4, and 8 are mated with Temper-Grip Sockets. Smaller Temper-Grip contacts are under development (contact factory for more information), so HCP sizes 12 & 16 were mated with a standard 39029 socket.

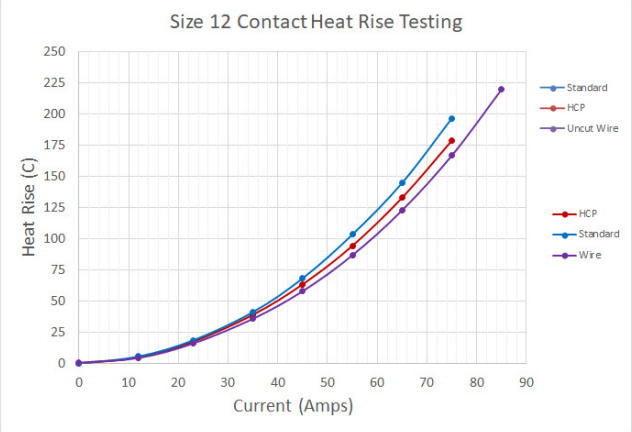
HCP with Temper-Grip

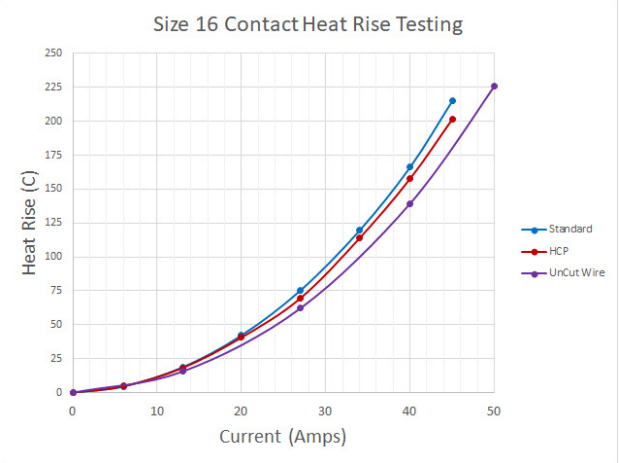






HCP with Standard 39029 Sockets





We Recommend Temper-Grip with High Current Pin Contacts

Socket Contact Options

TEMPER-GRIP

HIGH TEMPERATURE CAPABILITY

For use in high temperature (200 C+) applications, the Temper-grip socket has been tested to maintain current capability in high temperature situations where standard mil-spec socket contacts can begin to relax.

"NAPKIN-RING" TECHNOLOGY

Proven design utilizing a stainless steel napkin ring to prevent the beryllium copper tines from "relaxing" at higher temperatures and maintaining a greater area of true contact in all situations to decrease resistance.

Standard Contacts	
Size	Amps
8	46
4	80
0	150

Temper-GRIP Contacts	
Size	Amps
8	65
4	110
0	220

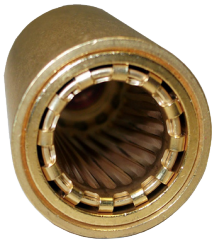
RADSOK

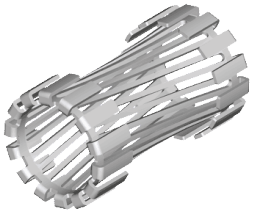
LOW CONTACT ENGAGEMENT/SEPARATION FORCES

The hyperbolic lamella socket contact construction distributes normal forces over a high percentage of mating pin surface. This creates a smooth, even engagement effort. This force distribution also contributes to excellent performance in vibration applications with resistance to typical fretting corrosion.

LOW CONTACT RESISTANCE

The large interface area between the socket lamella and pin surface results in very low contact resistance, enabling the RADSOK® contacts' high current rating compared to traditional power contact designs.





HIGH MATING CYCLE DURABILITY

RADSOK contacts with typical silver plating finishes have demonstrated survival of 20,000 mating cycles. Even with continuous exposure to harsh environmental abuse (salt, sand, and high humidity). RADSOK contacts have been tested to maintain low contact resistance beyond 10,000 mating cycles.

Standard Contacts	
Size	Amps
8	46
4	80
0	150

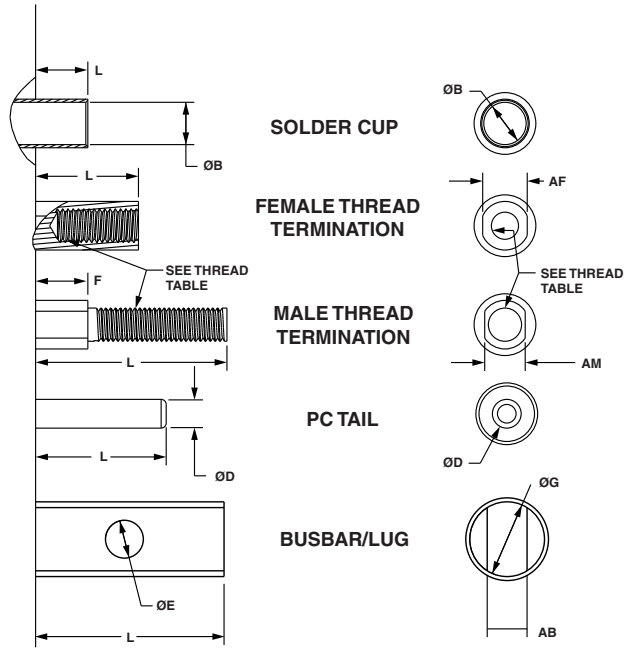
RADSOK Contacts		
Size	Amps	Cartridge size
8	70	3.6 MM
4	120	5.7MM
0	250	9.1MM

Thread Chart and Termination Diameters

Amphenol Aerospace

BUSBAR CHART				
Contact Size	ØE	ØG	AB	L
8	.100	.263	.100	
4	.190	.375	.200	1.100” max
0	.250	.563	.250	All sizes

ALL DIMENSIONS SHOWN ARE FOR POTTED CONNECTOR VERSIONS AND ARE MEASURED FROM THE BACK OF THE CONNECTOR SHELL. IF NEEDED, FOR CONNECTORS WITH NON-POTTED CONTACTS, CONTACT FACTORY FOR ANY APPLICABLE STICKOUT



For more options or custom requirements, contact factory

THREAD CHART AND TERMINATION DIAMETERS						
Contact Size	Thread Type				Solder Cup	PC Tail
	Male		Female			
	Thread	Wrench Flat “AM”	Thread	Wrench Flat “AF”	Diameter B	Diameter D
16	*	*	*	*	0.078	0.062
12	*	*	*	*	0.116	0.081
8	#5-44-UNF	0.200	#8-32-UNF	0.220	0.209	0.142
4	#10-32-UNF	0.300	#12-28-UNF	0.320	0.332	0.225
0	1/4-28-UNF	0.450	5/16-24-UNF	0.480	0.469	0.356

*Except for PC tail and Busbar, Size 12 and 16 contacts are solder cup for backfilled connectors, crimp for non-backfilled connectors.

All dimensions are nominal, contact Amphenol for exact tolerances. For PKB05 dimensions, contact factory

Male Threaded Termination

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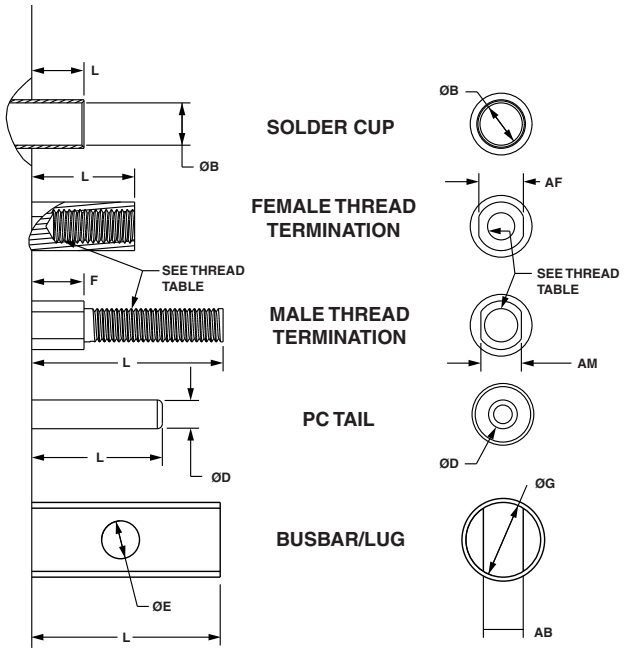

For more options or custom requirements, contact factory

MALE THREADED TERMINATION *										
Shell Size	PKT									
	PKT00		PKT02		PKT05		PKT06		PKT07	
	L	F	L	F	L	F	L	F	L	F
16	0.750	0.200	0.812	0.262	0.740	0.190	0.740	0.190	0.750	0.200
18	0.700	0.150	0.801	0.251	0.670	0.120	0.670	0.120	0.700	0.150
20	0.700	0.150	0.801	0.251	0.670	0.120	0.670	0.120	0.700	0.150
22	0.700	0.150	0.793	0.243	0.670	0.120	0.670	0.120	0.700	0.150
24	0.685	0.135	0.793	0.243	0.670	0.120	0.670	0.120	0.685	0.135
28	0.685	0.135	0.793	0.243	0.670	0.120	0.670	0.120	0.685	0.135
32	0.685	0.135	0.845	0.295	0.670	0.120	0.670	0.120	0.685	0.135
36	0.685	0.135	0.793	0.243	0.670	0.120	0.670	0.120	0.685	0.135

*Dimensions are measured from back of shell

MALE THREADED TERMINATION*										
Shell Size	PKB									
	PKB00		PKB02		PKB06		PKB07		PKB08	
	L	F	L	F	L	F	L	F	L	F
16	0.808	0.258	0.808	0.258	0.795	0.245	0.687	0.137	0.804	0.254
18	0.808	0.258	0.808	0.258	0.795	0.245	0.81	0.26	0.772	0.222
20	0.808	0.258	0.808	0.258	0.795	0.245	0.81	0.26	0.772	0.222
22	0.808	0.258	0.808	0.258	0.795	0.245	0.81	0.26	0.772	0.222
24	0.733	0.183	0.733	0.183	0.732	0.182	0.81	0.26	0.76	0.21
28	0.733	0.183	0.733	0.183	0.732	0.182	0.72	0.17	0.67	0.12
32	0.67	0.12	0.67	0.12	0.67	0.12	0.72	0.17	0.67	0.12
36	0.67	0.12	0.67	0.12	0.67	0.12	0.72	0.17	0.67	0.12

*Dimensions are measured from back of shell

All dimensions are nominal, contact Amphenol for exact tolerances. For PKB05 dimensions, contact factory

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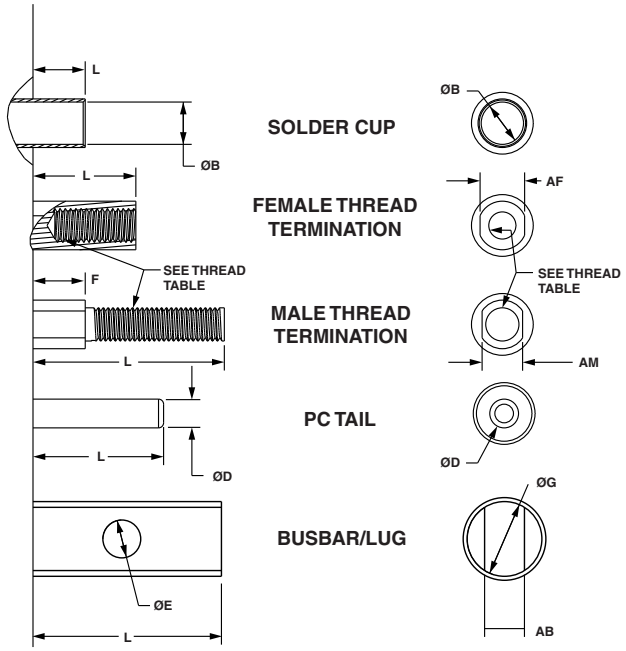

For more options or custom requirements, contact factory

FEMALE THREADED TERMINATION *										
Shell Size	PKT					PKB				
	PKT00	PKT02	PKT05	PKT06	PKT07	PKB00	PKB02	PKB06	PKB07	PKB08
	L	L	L	L	L	L	L	L	L	L
16	0.300	0.362	0.290	0.290	0.300	0.358	0.358	0.345	0.237	0.354
18	0.250	0.351	0.220	0.220	0.250	0.358	0.358	0.345	0.360	0.322
20	0.250	0.351	0.220	0.220	0.250	0.358	0.358	0.345	0.360	0.322
22	0.250	0.343	0.220	0.220	0.250	0.358	0.358	0.345	0.360	0.322
24	0.235	0.343	0.220	0.220	0.235	0.283	0.283	0.282	0.360	0.310
28	0.235	0.343	0.220	0.220	0.235	0.283	0.283	0.282	0.270	0.220
32	0.235	0.395	0.220	0.220	0.235	0.220	0.220	0.220	0.270	0.220
36	0.235	0.343	0.220	0.220	0.235	0.220	0.220	0.220	0.270	0.220

*Dimensions are measured from back of shell
All dimensions are nominal, contact Amphenol for exact tolerances. For PKB05 dimensions, contact factory

Solder Cup and PCB Termination

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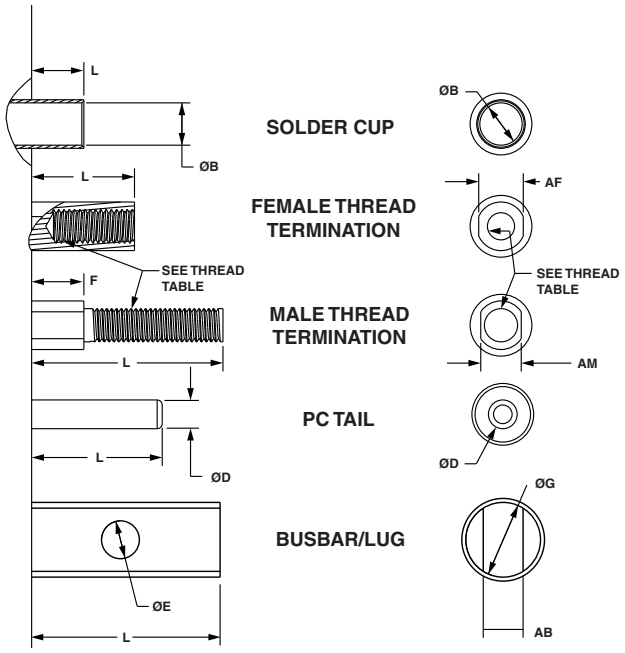


For more options or custom requirements, contact factory

SOLDER CUP TERMINATION (BACK FILL)

Shell Size	PKT					PKB			
	PKT00	PKT02	PKT05	PKT06	PKT07	PKB00	PKB02	PKB06	PKB07
	L	L	L	L	L	L	L	L	L
16	0.230	0.292	0.220	0.220	0.230	0.288	0.288	0.275	0.167
18	0.180	0.281	0.150	0.150	0.180	0.288	0.288	0.275	0.29
20	0.180	0.281	0.150	0.150	0.180	0.288	0.288	0.275	0.29
22	0.180	0.273	0.150	0.150	0.180	0.288	0.288	0.275	0.29
24	0.165	0.273	0.150	0.150	0.165	0.213	0.213	0.212	0.29
28	0.165	0.273	0.150	0.150	0.165	0.213	0.213	0.212	0.2
32	0.165	0.325	0.150	0.150	0.165	0.15	0.15	0.15	0.2
36	0.165	0.273	0.150	0.150	0.165	0.15	0.15	0.15	0.2

*Dimensions are measured from back of shell

PCB TERMINATION

Shell Size	PKT					PKB			
	PKT00	PKT02	PKT05	PKT06	PKT07	PKB00	PKB02	PKB06	PKB07
	L	L	L	L	L	L	L	L	L
16	0.750	0.812	0.740	0.740	0.750	0.808	0.608	0.595	0.687
18	0.700	0.801	0.670	0.670	0.700	0.808	0.608	0.595	0.810
20	0.700	0.801	0.670	0.670	0.700	0.808	0.608	0.595	0.810
22	0.700	0.793	0.670	0.670	0.700	0.808	0.608	0.595	0.810
24	0.685	0.793	0.670	0.670	0.685	0.733	0.533	0.532	0.810
28	0.685	0.793	0.670	0.670	0.685	0.733	0.533	0.532	0.720
32	0.685	0.845	0.670	0.670	0.685	0.670	0.470	0.470	0.720
36	0.685	0.793	0.670	0.670	0.685	0.670	0.470	0.470	0.720

*Dimensions are measured from back of shell
All dimensions are nominal, contact Amphenol for exact tolerances. For PKB05 dimensions, contact factory

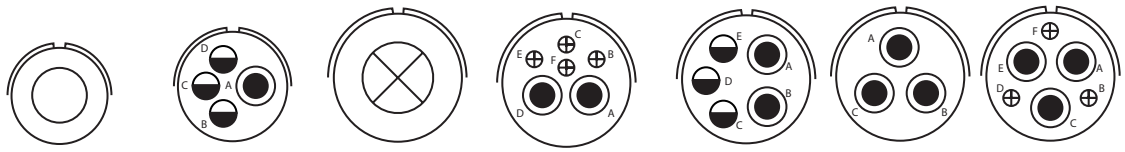
Insert Availability and Identification

Insert Arrangement	Service Rating	Total Contacts	Contact Size				
			0	4	8	12	16
16-12	A	1		1			
18-13	A	4			1	3	
20-2	D	1	1				
20-8	Inst.	6			2		4
20-14	A	5			2	3	
20-19	A	3			3		
20-22	A	6			3		3
22-2	D	3			3		
22-6*	D	3			2		1
22-7*	E	1	1				
22-21	A	3	1				2
22-22	A	4			4		
24-10	A	7			7		
24-11	A	9			3	6	
24-12	A	5		2		3	
24-22	D	4			4		
28-1	D/A	9			3	6	
28-10	D/A	7		2	2	3	
28-22	D	6		3			3
32-1	E/D	5	2			3	
32-6	A	23		2	3	2	16
32-9	D	14		2			12
32-15	D	8	2			6	
32-17	D	4		4			
36-3	D	6	3			3	
36-5	A	4	4				
36-6	A	6	2	4			
36-9	A	31		1	2	14	14

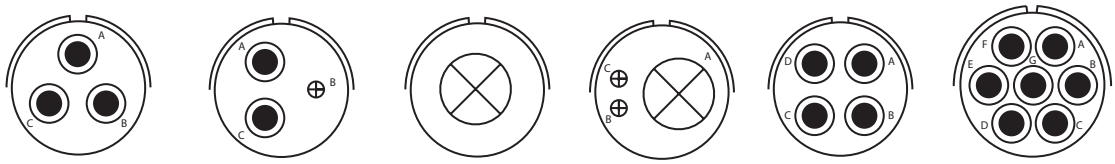
Insert Arrangements

Front Face of Pin Insert or Rear Face of Socket Insert Illustrated

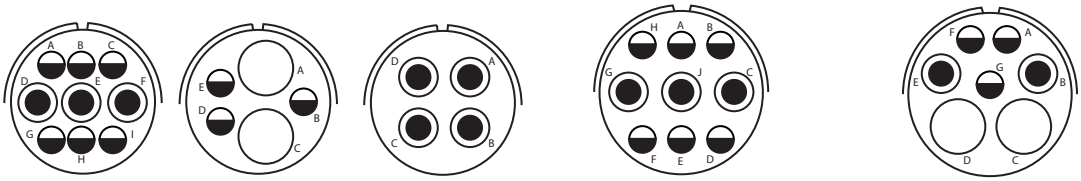
† Designates arrangements suitable for bussing multiple contacts together for increased current carrying capability. Contact factory for more information.



Insert Arrangement	16-12	18-13		20-2	20-8		20-14		20-19†	20-22	
Service Rating	A	A		D	Inst.		A		A	A	
Number of Contacts	1	1	3	1	2	4	2	3	3	3	3
Contact Size	4	8	12	0	8	16	8	12	8	8	16



Insert Arrangement	22-2†	22-6		22-7	22-21		22-22†	24-10
Service Rating	D	D		E	A		A	A
Number of Contacts	3	2	1	1	1	2	4	7
Contact Size	8	8	16	0	0	16	8	8

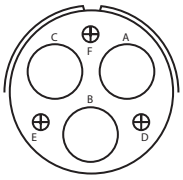


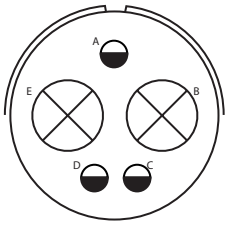
Insert Arrangement	24-11		24-12		24-22†	28-1		28-10		
Service Rating	A		A		D	A, J, E = D; Bal. = A		G = D, Bal. = A		
Number of Contacts	3	6	2	3	4	3	6	2	2	3
Contact Size	8	12	4	12	8	8	12	4	8	12

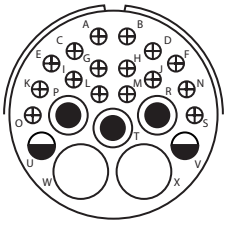
Insert Arrangements

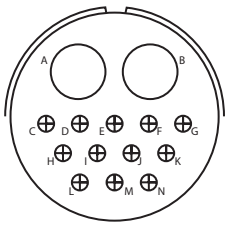
Amphenol Aerospace

Front Face of Pin Insert or Rear Face of Socket Insert Illustrated

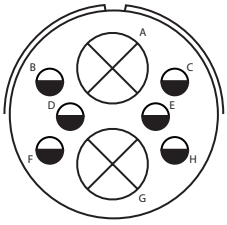


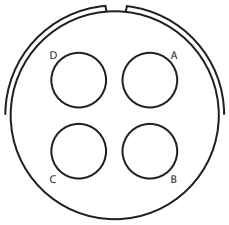


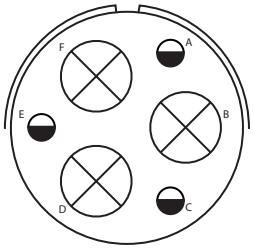




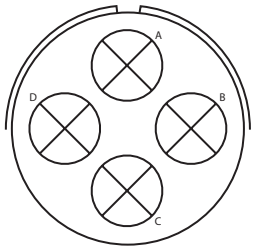
Insert Arrangement	28-22†		32-1†		32-6				32-9	
Service Rating	D		A = E; B, C, D, E = D		A				D	
Number of Contacts	3	3	2	3	2	3	2	16	2	12
Contact Size	4	16	0	12	4	8	12	16	4	16

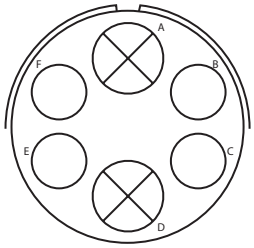


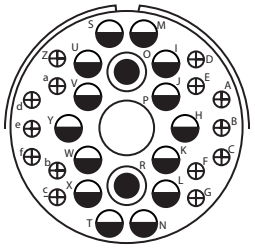




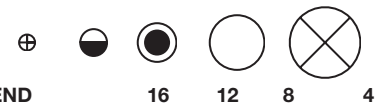
Insert Arrangement	32-15†		32-17†		36-3†	
Service Rating	D		D		D	
Number of Contacts	2	6	4		3	3
Contact Size	0	12	4		0	12







Insert Arrangement	36-5†		36-6†		36-9			
Service Rating	A		A		A			
Number of Contacts	4		2	4	1	2	14	14
Contact Size	0		0	4	4	8	12	16



CONTACT LEGEND 16 12 8 4 0

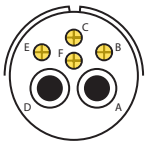
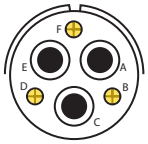
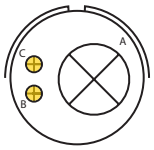
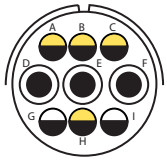
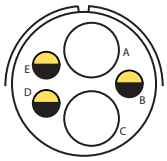
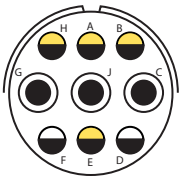
High Voltage Interlock Insert Arrangements

Contacts Indicated are Supplied as longer “First Mate-Last Break” contacts

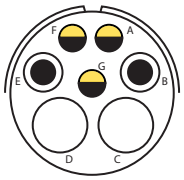
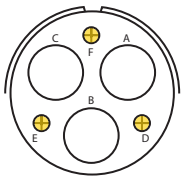
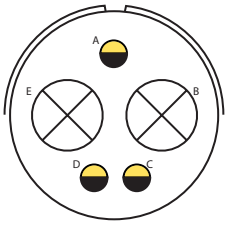
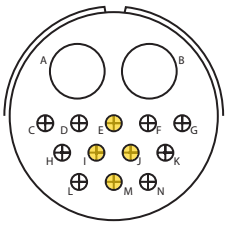
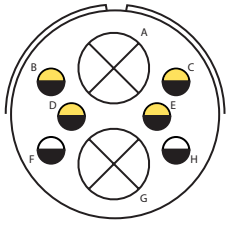
These can be used as the high voltage safety Interlocks, standard crimp contacts also included as spares

Front Face of Pin Insert or Rear Face of Socket Insert Illustrated

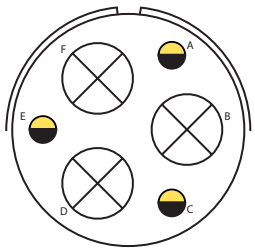
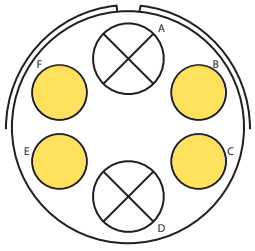
† Designates arrangements suitable for bussing multiple contacts together for increased current carrying capability. Contact factory for more information.

Insert Arrangement	20-8		20-22		22-21		24-11		24-12		28-1	
Service Rating	Inst.		A		A		A		A		A, J, E = D; Bal. = A	
Number of Contacts	2	4	3	3	1	2	3	6	2	3	3	6
Contact Size	8	16	8	16	0	16	8	12	4	12	8	12

Insert Arrangement	28-10			32-9		32-1†		32-9†		32-15†	
Service Rating	G = D, Bal. = A			D		A = E; B, C, D, E		D		D	
Number of Contacts	2	2	3	3	3	2	3	3	3	2	6
Contact Size	4	8	12	4	16	0	12	0	12	0	12

Insert Arrangement	36-3†		36-3†	
Service Rating	D		A	
Number of Contacts	3	3	2	4
Contact Size	0	12	0	4

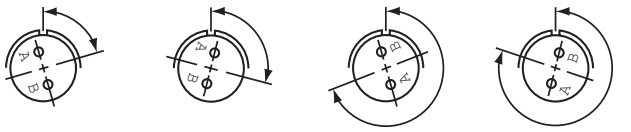
CONTACT LEGEND 16 12 8 4 0

Insert Alternate Positioning

To avoid cross-plugging problems in applications requiring the use of more than one connector of the same size and arrangement, alternate rotations are available as indicated in the accompanying charts.

As shown in the diagram below, the front face of the pin insert is rotated within the shell in a clockwise direction from the normal shell key. The socket insert would be rotated counter-clockwise the same number of degrees in respect to the normal shell key.

The charts give the W, X, Y, Z positions for the alternate rotations available for the insert arrangements of the rear release
MIL-DTL-5015 series of connectors. If an insert arrangement number is not given, then there is no available alternate rotation for that pattern.



Position W Position X Position Y Position Z

View looking into front face of pin insert or rear of socket insert.

Arrangement	Degrees			
	W	X	Y	Z
16-12	Alternates Not Available			
18-13	80	110	250	280
20-2	Alternates Not Available			
20-8	80	110	250	280
20-14	80	110	250	280
20-19	90	180	270	-
20-22	80	110	250	280
22-6	80	110	250	280
22-7	Alternates Not Available			
22-2	70	145	215	290
22-21	80	110	250	280
22-22	-	110	250	-
24-10	80	-	-	280
24-11	35	110	250	325
24-12	80	110	250	280
24-22	45	110	250	-
28-1	80	110	250	280
32-1	80	110	250	280
32-9	80	110	250	280
32-15	35	110	250	280
32-17	45	110	250	-
36-3	70	145	215	290
36-5	-	120	240	-
36-6	35	110	250	325
36-9	80	125	235	280

How to Order

High Power Series

1. Connector Type	2. Shell Style	3. Finish	4. Contact Style	5. Shell Size–Insert Arrangement	6. Socket type/Pin	7. Alternate Positions	8. Mod Code
PKB	00	DT	M	28–22	R	W	(HVL)

1. CONNECTOR TYPE

PKB	High power with bayonet coupling
PKT	High power with threaded coupling

2. SHELL STYLE

00	Wall mount receptacle
02	Box mount receptacle
05	Straight Plug with rear access (PKB only)
06	Straight plug
07	Jam Nut Receptacle
08	Jam Nut Receptacle without rear accessory threads (PKB ONLY)
09	Self-locking plug (PKT ONLY)

3. FINISH

DT	Durmalon (PTFE)
DZ	Black Zinc Nickel
RF	Electroless Nickel
RW	O.D. CAD
RL	Nickel Plating Stainless Steel
RK	Passivated Stainless Steel
DW	Thick O.D. CAD
DS	AP-93 Tri-NickelAlloy

*Contact factory for custom plating options

4. CONTACT STYLE

M	Male Thread Termination (Potted-in)
F	Female Thread Termination (Potted-in)
C	Crimp (removable with grommet)*
S	Solder (removable with grommet)*
P	Solder (potted-in)
B	Busbar (contact factory for details)
T	PC Tail (Potted-in)

Note-All size 12 & 16 contacts are solder cup except for "C" class which are crimp & "T" class which are PC Tail
* Box mounts don't include grommet

5. SHELL SIZE & INSERT ARRANGEMENT

PAGE 13-14	First number represents Shell Size, second number is the Insert Arrangement.

6. SOCKET TYPE / PIN

	SOCKET
T	Temper-Grip- Recommended for 150°C +
R	RADSOK- Recommended up to 150°C
S	Standard Socket Contacts
	PIN
P	High Current Pin

7. ALTERNATE POSITIONS

"W", "X", "Y", "Z" designate that insert is rotated in its shell from normal position. No letter required for normal (no rotation) position. See page 13 for description of alternate positions.

8. MOD CODE

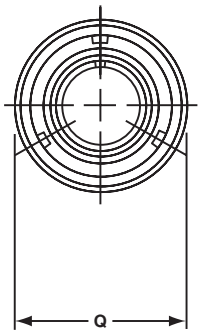
(HVL)	High Voltage Safety Interlock, First mate-Last break contacts

*Other modifications available, contact factory for details

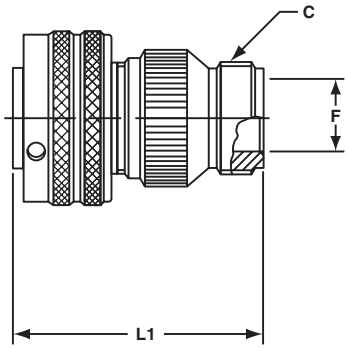
For more information on Busbar versions, contact factory

Amphenol Aerospace

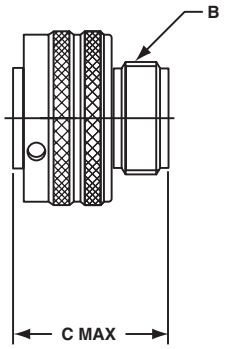
PKB05 & PKB06



PKB05 (WITH REAR ACCESSORY)



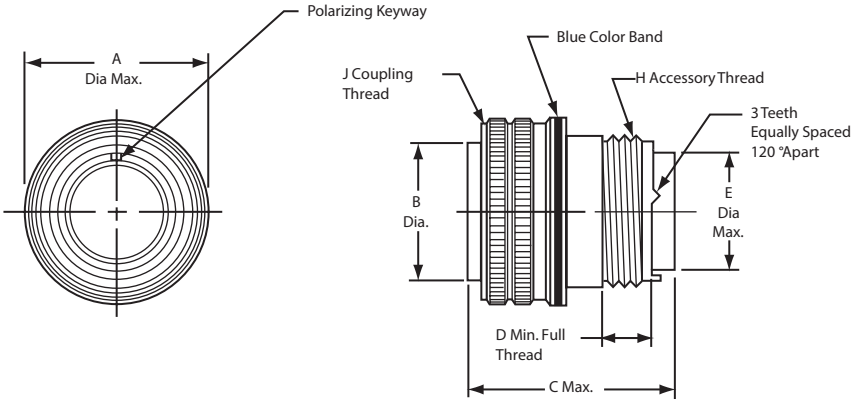
PKB06 (WITHOUT REAR ACCESSORY)



Shell Size	B Thread Class 2A	C Thread Class 2A	F Ref	L1 Ref	C Max.*	Q Max.
16†	1.0000-20 UNEF	-	-	-	1.792	1.260
18†	1.0625-18 UNEF	-	-	-	2.000	1.437
20†	1.1875-18 UNEF	-	-	-	2.000	1.571
22†	1.3125-18 UNEF	-	-	-	2.000	1.697
24	1.4375-18 UNEF	1.4375-18 UNEF	1.095	2.389	2.000	1.835
28	1.7500-18 UNS	1.4375-18 UNEF	1.229	2.489	2.000	2.102
32	2.0000-18 UNS	1.7500-18 UNS	1.489	2.539	2.000	2.366
36	2.2500-16 UN	2.0000-18 UNS	1.781	2.589	2.000	2.610

† Not available in PKB05

PKT06 PKT09



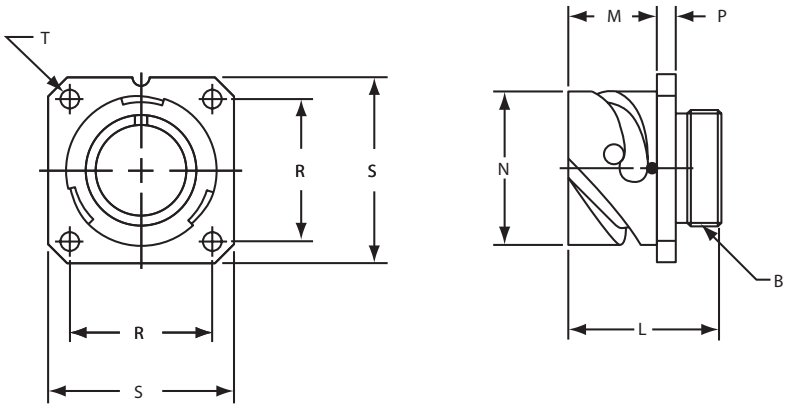
Shell Size	A Dia. Max.	B Dia. ±.005	C Max.*	D Min.	E Dia. Max.	H Thread Class 2A	J Thread Class 2B
16	1.250	.800	1.792	.290	.790	1.0000-20 UNEF	1.0000-20 UNEF
18	1.344	.925	2.000	.290	.869	1.0625-18 UNEF	1.1250-18 UNEF
20	1.469	1.045	2.000	.290	.994	1.1875-18 UNEF	1.2500-18 UNEF
22	1.594	1.170	2.000	.290	1.119	1.3125-18 UNEF	1.3750-18 UNEF
24	1.719	1.295	2.000	.290	1.244	1.4375-18 UNEF	1.5000-18 UNEF
28	1.969	1.515	2.000	.467	1.465	1.7500-18 UNS	1.7500-18 UNS
32	2.219	1.765	2.000	.467	1.715	2.0000-18 UNS	2.0000-18 UNS
36	2.469	1.975	2.000	.467	1.930	2.2500-16 UN	2.2500-16 UN

*See detail drawing for exact dimensions

Wall Mounting Receptacle

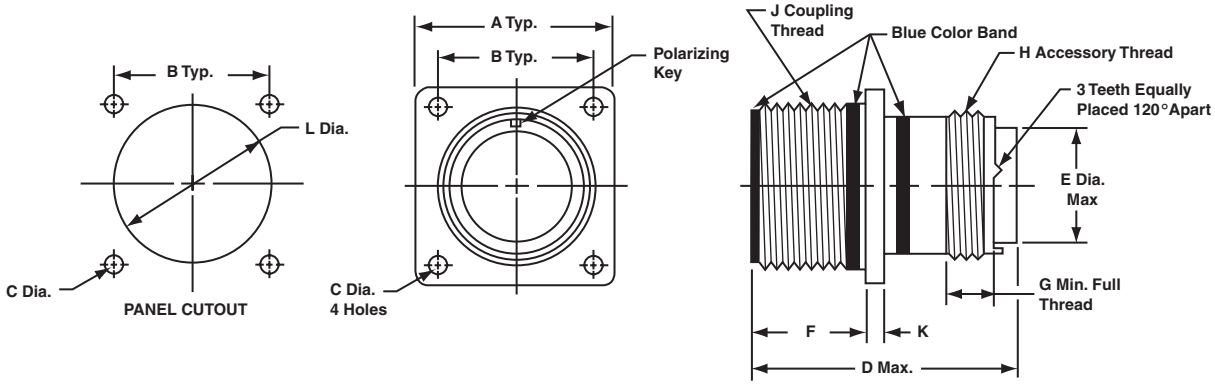
PKB00 & PKT00

PKB00



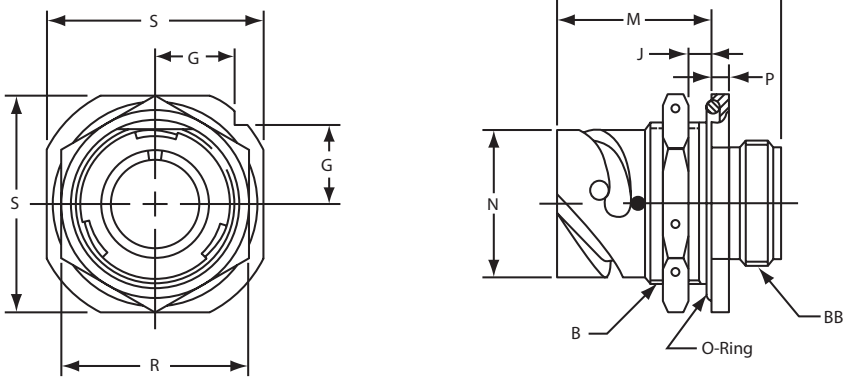
Shell Size	B Thread Class 2A	L ±.010	M +.016 −.000	N +.000 −.006	P ±.008	R ±.004	S ±.012	T +.004 −.000
16	1.0000-20 UNEF	1.575	.846	1.079	.126	.969	1.280	.126
18	1.0625-18 UNEF	1.623	.907	1.213	.157	1.063	1.378	.126
20	1.1875-18 UNEF	1.623	.907	1.346	.157	1.157	1.496	.126
22	1.3125-18 UNEF	1.623	.907	1.472	.157	1.252	1.614	.126
24	1.4375-18 UNEF	1.638	.907	1.610	.157	1.374	1.752	.146
28	1.7500-18 UNS	1.638	.947	1.839	.157	1.563	2.000	.146
32	2.0000-18 UNS	1.638	.947	2.102	.157	1.752	2.244	.169
36	2.2500-16 UN	1.638	.947	2.346	.157	1.937	2.500	.169

PKT00



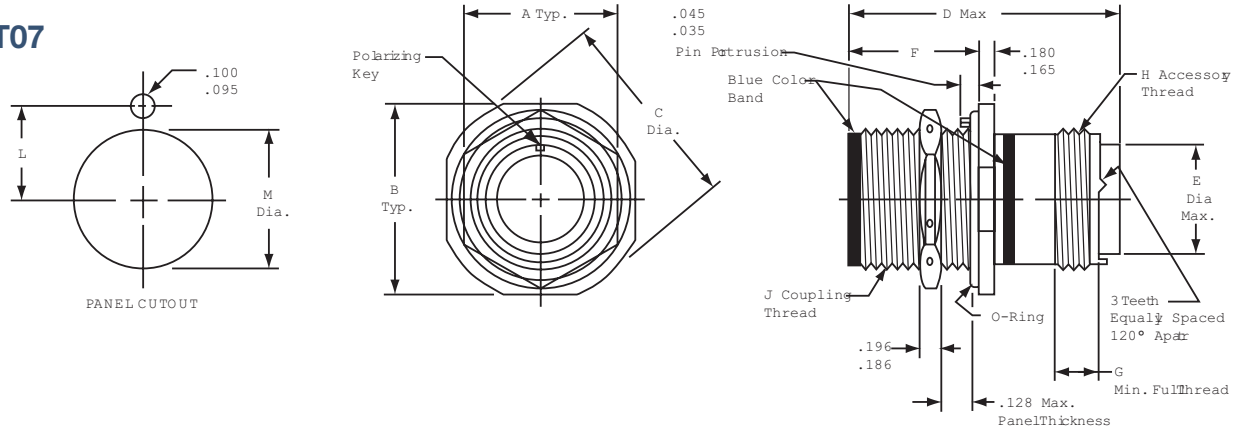
Shell Size	A ±.031	B	C Dia. +.010 −.005		D Max.	E Dia. Max.	F	G Min.	H Thread Class 2A	J Thread Class 2A	K	L Dia. ±.010
			Class A, F, R, W	Class K								
16	1.281	.969	.120	.150	2.500	.790	.781/.750	.290	1.0000-20 UNEF	1.0000-20 UNEF	.083	1.062
18	1.375	1.062	.120	.177	2.500	.869	.781/.750	.290	1.0625-18 UNEF	1.1250-18 UNEF	.125	1.188
20	1.500	1.156	.120	.177	2.500	.994	.781/.750	.290	1.1875-18 UNEF	1.2500-18 UNEF	.125	1.312
22	1.625	1.250	.120	.177	2.500	1.119	.781/.750	.290	1.3125-18 UNEF	1.3750-18 UNEF	.125	1.438
24	1.750	1.375	.147	.177	2.500	1.244	.843/.812	.290	1.4375-18 UNEF	1.5000-18 UNEF	.125	1.562
28	2.000	1.562	.147	.177	2.500	1.465	.843/.812	.467	1.7500-18 UNS	1.7500-18 UNS	.125	1.812
32	2.250	1.750	.173	.209	2.500	1.715	.906/.875	.467	2.0000-18 UNS	2.0000-18 UNS	.125	2.062
36	2.500	1.938	.173	.209	2.500	1.930	.906/.875	.467	2.2500-16 UN	2.2500-16 UN	.125	2.312

PKB07



Shell Size	B Thread Class 2A	G ±.012	J Wall Thickness		L ±.010	M ±.012	N +.000 −.006	P ±.007	R ±.016	S ±.012	BB Thread Class 2A
			Min.	Max.							
16	1.2500-18 UNEF	.618	.094	.295	1.909	1.264	1.079	.189	1.500	1.748	1.0000-20 UNEF
18	1.3750-18 UNEF	.661	.094	.354	1.941	1.327	1.213	.189	1.562	1.875	1.1250-18 UNEF
20	1.5000-18 UNEF	.709	.094	.358	1.941	1.327	1.349	.189	1.750	2.000	1.2500-18 UNEF
22	1.6250-18 UNEF	.795	.094	.358	1.941	1.327	1.472	.189	2.000	2.134	1.3750-18 UNEF
24	1.7500-18 UNEF	.795	.094	.358	1.953	1.327	1.610	.189	2.000	2.252	1.6250-18 UNEF
28	2.0000-18 UNEF	.886	.094	.394	2.043	1.386	1.839	.220	2.188	2.500	1.8750-16 UN
32	2.2500-16 UN	.972	.094	.394	2.043	1.386	2.102	.220	2.438	2.748	2.0625-16 UN
36	2.5000-16 UN	1.059	.094	.327	2.043	1.386	2.346	.220	2.812	3.000	2.3125-16 UN

PKT07

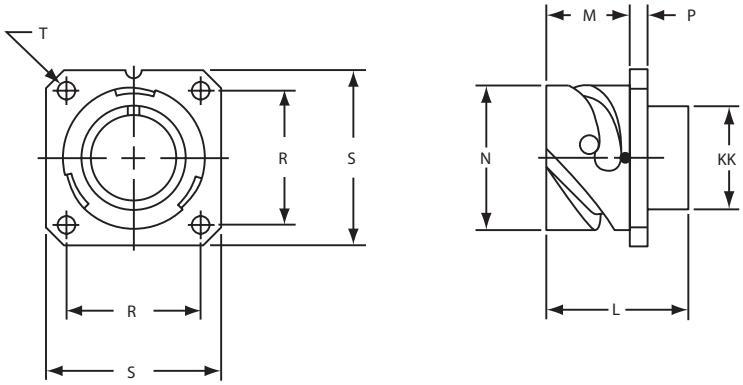


Shell Size	A ±.010	B ±.005	C Dia. ±.005	D Max.	E Dia. Max.	F ±.005	G Min.	H Thread Class 2A	J Thread Class 2A	Panel Cutout Dimensions	
										L ±.005	M Dia. +.015 −.000
16	1.250	1.687	1.772	2.500	.790	.970	.290	1.0000-20 UNEF	1.0000-20 UNEF	.573	1.005
18	1.375	1.812	1.897	2.500	.869	.970	.290	1.0625-18 UNEF	1.1250-18 UNEF	.635	1.130
20	1.500	1.937	2.022	2.500	.994	.970	.290	1.1875-18 UNEF	1.2500-18 UNEF	.698	1.255
22	1.625	2.156	2.241	2.500	1.119	.970	.290	1.3125-18 UNEF	1.3750-18 UNEF	.760	1.380
24	1.750	2.281	2.366	2.500	1.244	.970	.290	1.4375-18 UNEF	1.5000-18 UNEF	.823	1.505
28	2.000	2.531	2.616	2.500	1.465	.970	.467	1.7500-18 UNS	1.7500-18 UNS	.948	1.755
32	2.375	2.781	2.866	2.500	1.715	.970	.467	2.0000-18 UNS	2.0000-18 UNS	1.073	2.005
36	2.625	3.031	3.116	2.500	1.930	.970	.467	2.2500-16 UN	2.2500-16 UN	1.198	2.255

Box Mounting Receptacle

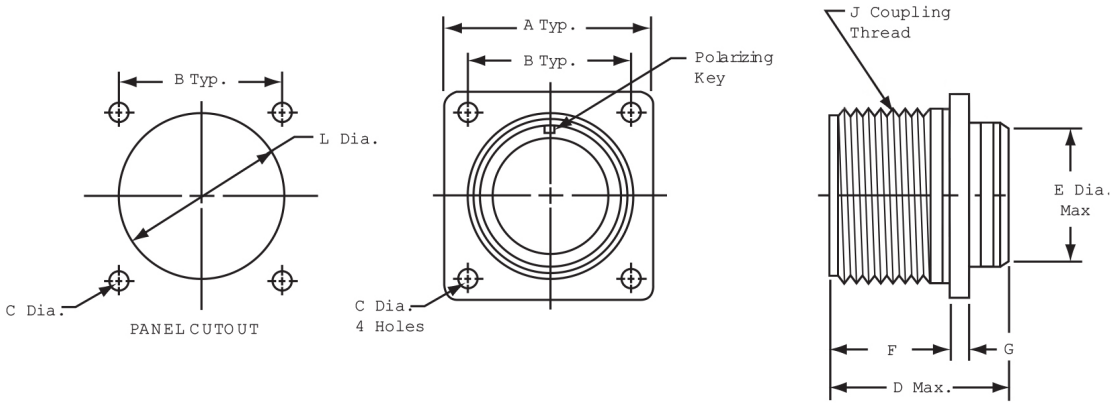
PKB02-Bayonet Coupling and PKT02-Threaded Coupling

PKB02



Shell Size	L ±.012	M +.016 −.000	N +.000 −.006	P ±.008	R ±.004	S ±.012	KK Max.	T +.004 −.000
16	1.331	.846	1.079	.126	.969	1.280	.882	.126
18	1.331	.907	1.213	.157	1.063	1.378	1.008	.126
20	1.331	.907	1.346	.157	1.157	1.496	1.142	.126
22	1.331	.907	1.472	.157	1.252	1.614	1.268	.126
24	1.406	.907	1.610	.157	1.374	1.752	1.390	.146
28	1.406	.947	1.839	.157	1.563	2.000	1.630	.146
32	1.469	.947	2.102	.157	1.752	2.244	1.882	.169
36	1.469	.947	2.346	.157	1.937	2.500	2.063	.169

PKT02



Shell Size	A ±.031	B	C Dia.	D Max.	E Dia. ±.016	F	G ±.015	J Thread Class 2A	L Dia. ±.010
16	1.281	.969	.130/.115	1.937	1.000	.765/.750	.083	1.0000-20 UNEF	1.062
18	1.375	1.062	.130/.115	1.937	1.062	.765/.750	.125	1.1250-18 UNEF	1.188
20	1.500	1.156	.130/.115	1.937	1.187	.765/.750	.125	1.2500-18 UNEF	1.312
22	1.625	1.250	.130/.115	1.937	1.312	.765/.750	.125	1.3750-18 UNEF	1.438
24	1.750	1.375	.157/.142	1.937	1.437	.827/.812	.125	1.5000-18 UNEF	1.562
28	2.000	1.562	.157/.142	1.937	1.750	.827/.812	.125	1.7500-18 UNS	1.812
32	2.250	1.750	.183/.168	1.937	2.000	.988/.875	.125	2.0000-18 UNS	2.062
36	2.500	1.938	.183/.168	1.937	2.250	.988/.875	.125	2.2500-16 UN	2.312

Contact Information, Sealing Plugs, Crimping and Insertion/Removal Tools

CRIMP REAR RELEASE CONTACTS

Contact Size	Wire Range		Socket Contacts	Pin Contacts
	AWG	mm^2	Amphenol Part Number	Amphenol Part Number
16	20–16	0.5–1.4	Contact Factory	10-759136-165
12	14–12	2–3	Contact Factory	10-759136-125
8	10–8†	5–8.5	Contact Factory	10-759136-085
4	6–4†	13–21	Contact Factory	10-759136-045
0	2–0†	34–60	Contact Factory	10-759136-005

* Shorter wire barrel

† Use MS3348 bushing kit to accommodate smaller wire.

CONTACT RETENTION

Contact Size**	Contact Retention	
	Axial Load	
	lb.	N
16	25	111.2
12	30	133.4
8	50	222.4
4	60	266.9
0	75	333.6

** Organize individual circuits to maintain heat rise within operating temperature requirements.

SEALING PLUGS

Contact Size	Sealing Plugs	
	Military Part Number	Amphenol/Matrix Part Number
16S	MS27488-16-3	10-405996-163
16	MS27488-16-3	10-405996-163
12	MS27488-12-3	10-405996-123
8	MS27488-8-3	10-405996-083
4	MS27488-4-3	10-405996-043
0	MS27488-0-3	10-405996-003

CRIMPING TOOLS

Contact Size	Wire Range		Finished Wire Dia. Range		Color Code	Crimping Tool Part Number	Turret or Positioner Part Number
	AWG	mm^2	Inch	mm			
16S	20–16	0.5–1.4	.053–.103	1.34–2.62	Red/White	M22520/1-01	M22520/1-02
16	20–16	0.5–1.4	.053–.103	1.34–2.62	Blue/White	M22520/1-01	M22520/1-02
12	14–12	2–3	.085–.158	2.15–4.01	Yell./White	M22520/1-01	M22520/1-02
8	10–8	5–8.5	.132–.255	3.35–6.48	White/Red	M22520/23-01	M22520/23-02
4	6–4	13–21	.237–.370	6.01–9.40	White/Blue	M22520/23-01	M22520/23-04
0	2–0	34–60	.360–.550	9.14–13.97	White/Yell.	M22520/23-01	M22520/23-05

INSERTION/REMOVAL TOOLS

Contact Size	Color Code	Military Part Number	Amphenol Part Number
16	Blue/White	M81969/14-03	10-538988-016
12	Yellow/White	M81969/14-04	10-538988-012
8	Red	M81969/14-06	6500-018-0008
4	Blue	M81969/14-07	6500-018-0004
0	Yellow	M81969/14-08	6500-018-0000

Amphenol installation instructions, L-2106, gives information on insertion, removal and crimping of contacts.

Tri-Power 38999 Series Introduction

AMPHENOL HAS COMBINED THE RELIABILITY OF D38999 CONNECTORS WITH THE HIGH-CURRENT RADSOK & TEMPER-GRIP CONTACT DESIGNS.

The Amphenol Tri-Power Connectors incorporate the proven design of the MIL-DTL-38999 Series III, Tri-Start connectors with Amphenol RADSOK, Temper-Grip, and High Pin Current Contacts. This newly designed product is the future of power connectors enabling customers to choose contacts ranging from 70 to 250 amps (240 to 1000 amps per connector) allowing more current carrying capability than comparably sized Mil-DTL-5015 & MIL-DTL-22992 Connectors.

How to Order

Tri-Power 38999

Amphenol Aerospace

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size	5. Insert Arrangement	6. Contact Type	7. Alternate Positions	8A. Mod Code TV Socket Only	8B. Mod Code TV & MP Pin Only
TV	00	RF	21	AH	P	B	B65	HCP

1. Connector Type•

TV	Tri-Power up to 200°C for Temper-Grip, Standard and Gold RADSOK only.
MP	Tri-Power with RADSOK up to 175°C Supplied with Silver plated pins, For Gold RADSOK select TV (See Mod Code)

2. Shell Style

00	Wall Mount Receptacle
06	Plug
07	Jam Nut Receptacle

3. Service Class

RS	Nickel plated, corrosion resistant steel, firewall capability, 500 hour salt spray, 200°C, EMI shielding -65dB @ 10GHz specification min.
RF	Electroless nickel plated aluminum, optimum EMI shielding effectiveness - 65dB @ 10GHz specification min., 48 hour salt spray
RW	Corrosion resistant olive drab cadmium plated aluminum, 500 hour extended salt spray, EMI -50dB @ 10GHz specification min.
DT	Durmalon: Gray non-reflective finish, RoHS® compliant cad & Hexavalent Chromium free. 500 hours extended salt spray, EMI -50db @ 10 GHz specification min.
DZ	Black Zinc-Nickel alternative to cadmium. Corrosion resistant, 500 hour salt spray, conductive, EMI shielding -50db @ 10 GHz specification min*

4. Shell Size

21	MIL Shell Size G
25	MIL Shell Size J
25L	-See Drawing
33	-See Drawing
37	-See Drawing*

* DZ Not available in size 37

5. Insert Arrangement

See drawings to the right

6. Contact Type

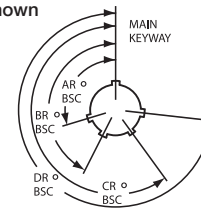
P	Pin Contacts
S	Socket Contacts

*For Special termination methods such as threaded or solder cup, contact factory

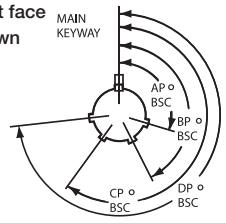
7. Alternate Positions

Shell Size	Key & keyway arrangement identification letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
21, and 25	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
25L, 33 and 37	N*	80	142	188	293
	A	135	170	188	310
	B	49	169	188	244
	C	66	140	188	257
	D	62	145	188	280
	E	79	153	188	272

RECEPTACLE
front face shown



PLUG
front face shown



A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

8A. Mod Code Contact Socket Type for TV only

B65	Temper-Grip for Socket connectors TV only.
RDS	Gold Plated Radsok for Socket connectors TV only.

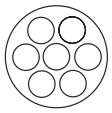
8B. Mod Code Contact Pin Type for TV and MP

HCP	High Power Pin (Pin side only)

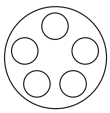
21-AH
(4) Size 8 Contacts

25-AH
(2) Size 4 Contacts

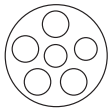
25L-3
(2) Size 4 (1) Size 8



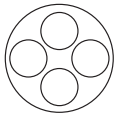
25L-7
(7) Size 8 Contacts



33-5
(5) Size 4



33-6
(2) Size 8 (4) Size 4

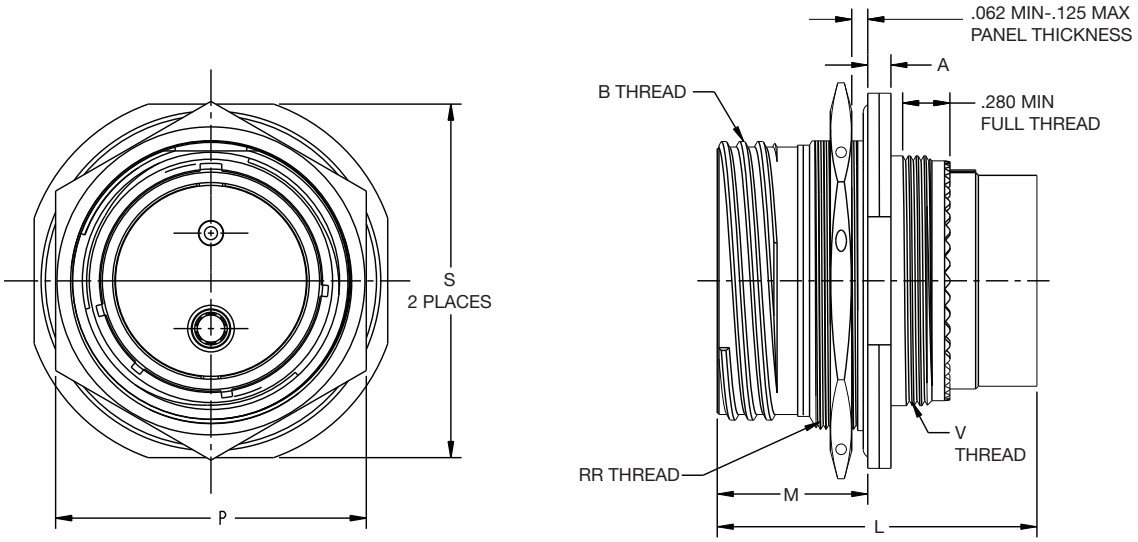


37-5
(4) Size 0

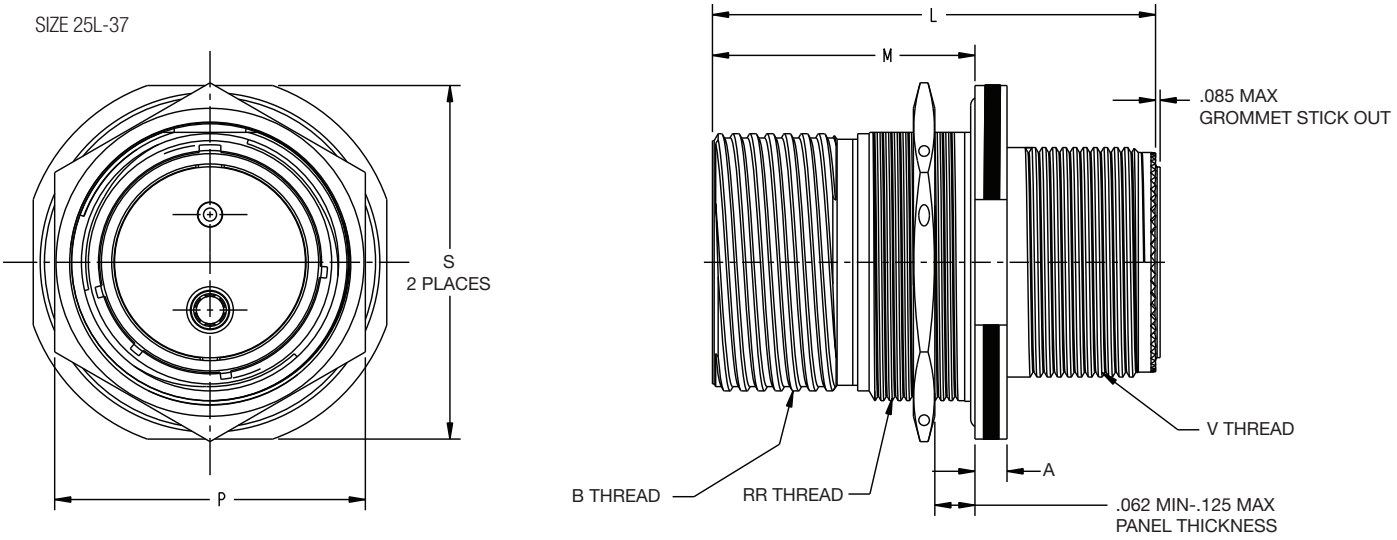
TRI-POWER 38999

MP07/TV07 Jam Nut Receptacle

SIZE 21-25



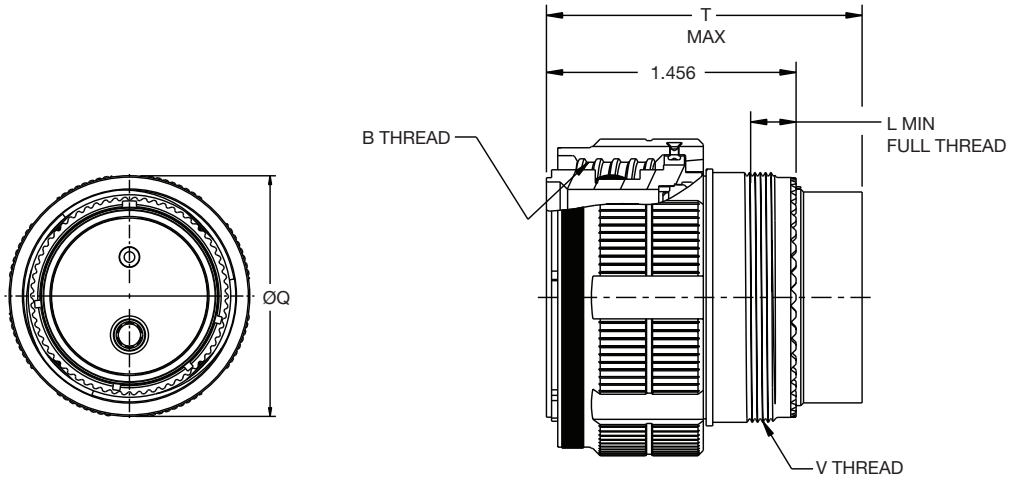
SIZE 25L-37



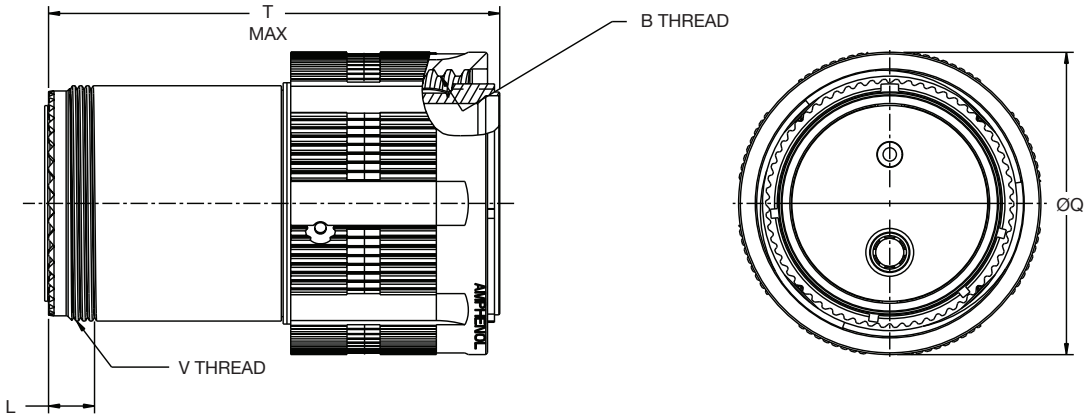
TRI-POWER 38999

MP07/TV07									
Coded Number	Shell Size	A +.010 -.005	B Thread Class 2A	M ±.005	P Hex +.017 -.016	RR Thread	S +.011 -.010	V Thread	L Max
MP/TV07RF-21-( )( )	21	.135	1.3750-0.1P-0.3L-TS	.878	1.688	M38XI-6G0.100R	1.938	M31XI-6g0.100R	1.888
MP/TV07RF-25-( )( )	25	.135	1.6250-0.1P-0.3L-TS	.878	2.000	M44XI-6G0.100R	2.188	M37XI-6g0.100R	1.888
MP/TV07RF-25L-( )( )	25L	.188	1.6250.0.1P-0.3L-TS	1.536	2.000	M44x1-6G0.100R	2.188	M37x1-6g0.100R	2.600
MP/TV07RF-33-( )( )	33	.188	1.8750-0.1P-0.3L-TS	1.536	2.250	M50XI-6G0.188R	2.469	M45XI-.5-6g0.188R	2.600
MP/TV07RF-37-( )( )	37	.188	2.1250-0.1P-0.3L-TS	1.536	2.625	M60XI-6G0.188R	2.828	M50XI-.5-6g0.188R	2.600

SIZE 21-25



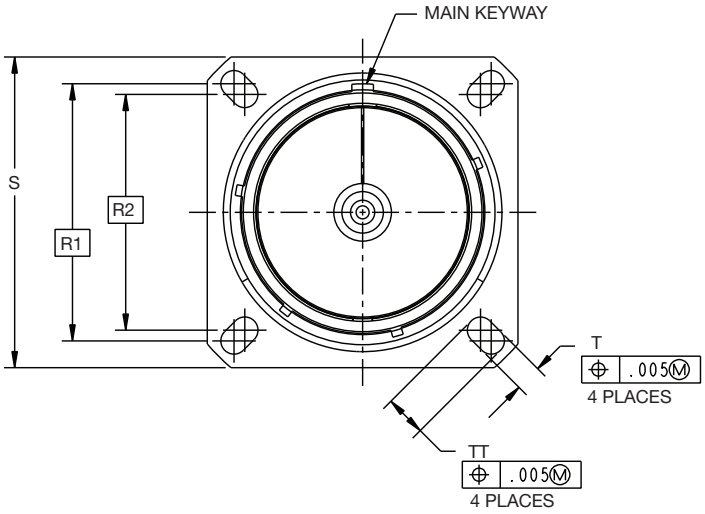
SIZE 25L-37

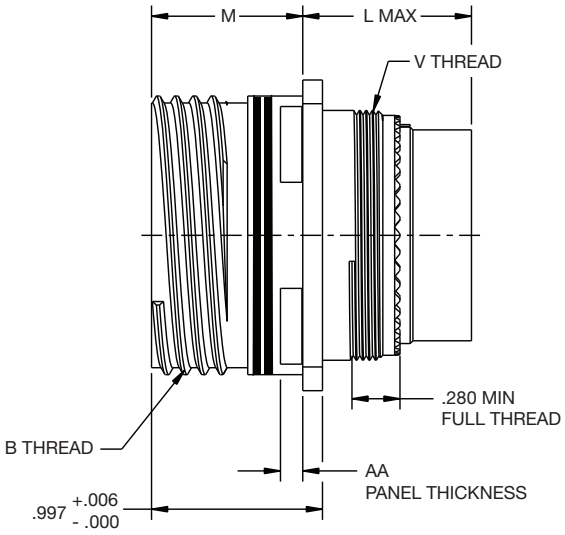


MP06/TV06						
TV06 Part Number	Shell Size	B Thread Class 2A	Ø Q Max	V Thread 9	L Min Full Threaded	T Max
MP/TV06RW-21-( )	21	1.3750-.1P-0.3LTS	1.625	M31X 1-6g0.100R	.280	1.888
MP/TV06RW-25-( )	25	1.500-0.1P-0.3LTS	1.750	M31X 1-6g0.100R	.280	1.888
MP/TV06RW-25L-( )	25L	1.6250-0.1P-0.3LTS	1.875	M37X 1-6g0.100R	.280	2.579
MP/TV06RW-33-( )	33	1.8750-0.1P-0.3LTS	2.203	M45X 1-5-6g0.188R	.594	2.579
MP/TV06RW-37-( )	37	2.1250-0.1P-0.3LTS	2.391	M50X 1-5-6g0.188R	.594	2.579

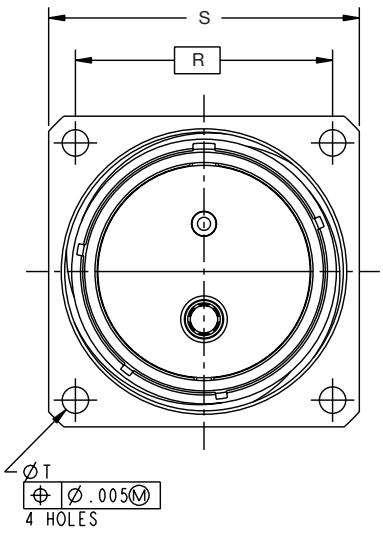
MP00/TV00 Wall Mount Receptacle

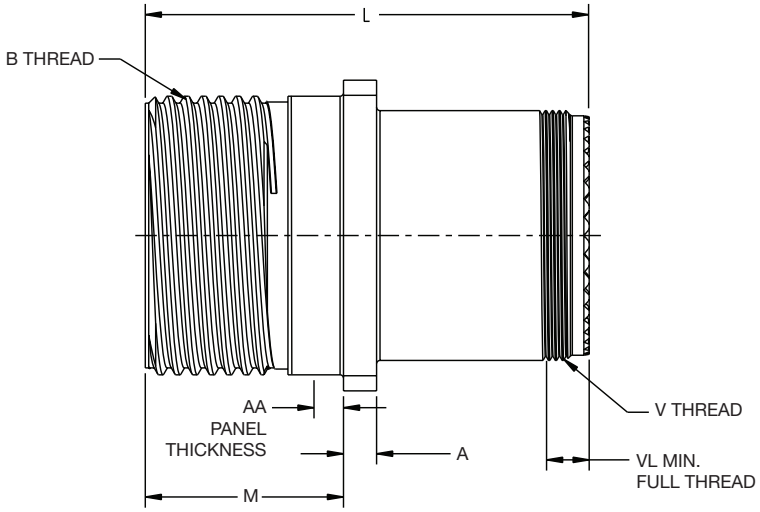
SIZE 21-25





SIZE 25L-37





MP00/TV00

TV06 Part Number	Shell Size	B Thread Class 2A	L Max	M± .005	R	R1	R2	S +.011 -.010	Ø T +.008 -.005	TT +.008 -.006	V Thread	AA Panel Thickness	L Min Full Threaded
MP/TV00RW-21-( )	21	1.3750-0.1P-0.3L-TS	1.900	.882	N/A	1.250	1.156	1.562	N/A	.194	M31X1-6g0.100R	.062-.125	.280
MP/TV00RW-25-( )	25	1.6250-0.1P-0.3L-TS	1.900	.882	N/A	1.500	1.375	1.812	N/A	.242	M37X1-6g0.100R	.062-.125	.280
MP/TV00RW-25L-( )	25L	1.6250-0.1P-0.3L-TS	2.600	1.489	1.500	N/A	N/A	1.812	.154	N/A	M37X1-6g0.100R	.062-.125	.280
MP/TV00RW-33-( )	33	1.8750-0.1P-0.3L-TS	2.600	1.716	1.750	N/A	N/A	2.312	.209	N/A	M45X1-5-6g0.188R	.062-.125	.594
MP/TV00RW-37-( )	37	2.1250-0.1P-0.3L-TS	2.600	1.957	1.922	N/A	N/A	2.484	.209	N/A	M50X1-5-6g0.188R	.062-.125	.594

BACKSHELLS

Amphenol offers Backshells for the High Power Connector Series.

AMPHENOL PCD

https://www.amphenolpcd.com/products/backshells

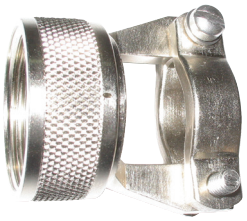
Backshells are qualified to AS85049 and provide strain relief, environmental sealing and EMI/RFI shielding. Also RoHS compliant, they are available in aluminum, stainless steel, brass, and composite—and come in various finishes. Different designs (i.e. straight, 45, and 90) are available and customization is always an option.

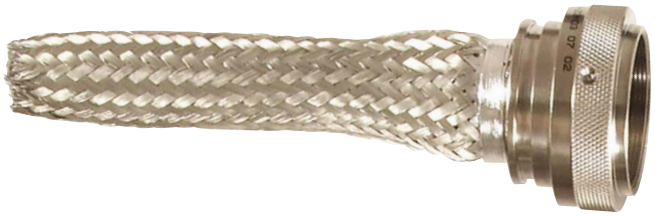
BACKSHELL DESIGNER

http://www.backshellworld.com/backshelldesigner.asp.This step by step Backshell designing should not only ensure accurate selection but should enhance the clarity of various features of Backshells too.

It is recommended that you may go thru the “Product” and “Technical Feature” sections before using this “Backshell Designer” so that you can design the ideal Backshell effortlessly for your application.

If you require certain modification for the items selected item to satisfy your specific application, we have built-in such provision too.





CRIMP LUGS, POWER LUGS, & ADDITIONAL ACCESSORIES

Contact factory if help is needed selecting hookups to threaded termination connectors as well as busbar connectors.

Standard Crimp Lugs

Powerlug by Amphenol-IPC visit www.amphenol-ipc.com

Notes

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