

Hermetic MIL-DTL-38999, Series I LJT, II JT, III TV

Insert Availability and Identification Chart

Series	Series	Series	Military	Hermetic			Service Rating	Total Contacts	22D	22M	22	20	16	12
				Class H	Class Y	TV*								
JT II	LJT I	TV III	III											
8-3■				P	P		M	3				3		
8-6	9-6			P	P		M	6	6					
8-35	9-35	9-35	A35	P	P	P	M	6	6					
8-44				P	P		M	4			4			
8-98	9-98	9-98	A98	P	P	P	I	3				3		
	11-2*	11-2*	B2	P**			I	2					2	
10-4	11-4	11-4					I	4				4		
10-5	11-5	11-5	B5	P	P	P	I	5				5		
10-13	11-13			P	P		M	13		13				
10-35	11-35	11-35	B35	P	P	P	M	13	13					
10-98	11-98	11-98	B98	P	P	P	I	6				6		
10-99	11-99	11-99	B99	P	P	P	I	7				7		
12-3				P	P		II	3					3	
12-4	13-4*	13-4*	C4	P	P	P	I	4					4	
12-8	13-8	13-8	C8	P	P	P	I	8				8		
12-22	13-22			P	P		M	22		22				
12-35	13-35	13-35	C35	P	P	P	M	22	22					
12-98	13-98	13-98	C98	P	P	P	I	10				10		
14-5	15-5						II	5					5	
14-15	15-15	15-15	D15	P	P	P	I	15				14	1	
14-18	15-18	15-18	D18	P	P	P	I	18				18		
	15-19	15-19	D19	P	P	P	I	19				19		
14-35	15-35	15-35	D35	P	P	P	M	37	37					
14-37	15-37			P	P		M	37		37				
14-68■				P	P		I	8					8	
14-97	15-97	15-97	D97	P	P	P	I	12				8	4	
16-6	17-6	17-6	E6	P	P	P	I	6						6
16-8	17-8*	17-8*	E8	P	P	P	II	8					8	
16-13	17-13						I	13					13	
16-26	17-26	17-26	E26	P	P	P	I	26				26		
16-35	17-35	17-35	E35	P	P	P	M	55	55					
16-55	17-55			P	P		M	55		55				
16-99	17-99	17-99	E99	P	P		I	23				21	2	
18-11	19-11*	19-11*	F11	P	P	P	II	11					11	
18-32	19-32	19-32	F32	P	P	P	I	32				32		
18-35	19-35	19-35	F35	P	P	P	M	66	66					
18-66	19-66			P	P		M	66		66				

- P Available with Pin contacts only
- Not Mil-Qualified.
- * Hermetic inserts - solder termination standard. (Contact Amphenol Aerospace for optional PCB or eyelet termination).
- * Ground plane proprietary option available.
- (2) Pin inserts only, not tooled for RP or O2RE (Consult Amphenol Aerospace for availability)

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				Class H	Class Y	TV*								
JT II	LJT I	TV III	III	P	P		M	79		79				
20-1	21-1			P	P									
20-11	21-11*	21-11*	G11				I	11						11
20-16	21-16*	21-16*	G16	P	P	P	II	16						16
20-35	21-35	21-35	G35	P	P	P	M	79	79					
20-39	21-39	21-39	G39	P	P	P	I	39				37	2	
20-41	21-41	21-41	G41	P	P	P	I	41				41		
22-1	23-1			P	P		M	100		100				
22-2	23-2			P	P		M	85			85			
22-21	23-21*	23-21*	H21	P	P	P	II	21						21
22-32				P	P		I	32				32		
22-35	23-35	23-35	H35	P	P	P	M	100	100					
22-53■	23-53	23-53	H53	P	P	P	I	53				53		
22-55	23-55	23-55	H55	P	P	P	I	55				55		
24-1	25-1			P	P		M	128		128				
24-4	25-4	25-4	J4	P	P	P	I	56				48	8	
24-19■	25-19*	25-19*	J19	P	P	P	I	19						19
24-24	25-24*	25-24*	J24	P	P		I	24					12	12
24-35	25-35	25-35	J35	P	P	P	New M	128	128					
24-61	25-61	25-61	J61	P	P	P	I	61				61		

P Available with Pin contacts only

■ Not Mil-Qualified.

* Hermetic inserts - solder termination standard. (Contact Amphenol Aerospace for optional PCB or eyelet termination).

★ Ground plane proprietary option available.

(2) Pin inserts only, not tooled for RP or 02RE (Consult Amphenol Aerospace for availability)

Hermetic MIL-DTL-38999, Series I LJT, II JT, III TV

Insert Arrangements

Front face of pin inserts illustrated

Shell Size & Insert Arrg. for:								
Series II JT	8-3	8-6	8-35	8-44	8-98	10-4	10-5	10-13
Series I LJT	9-3	9-6	9-35	9-44	9-98	11-2	11-4	11-13
Series III TV			9-35		9-98	11-2	11-4	11-5
Service Rating	M	M	M	M	I	I	I	M
# of Contacts	3	6	6	4	3	2	4	13
Contact Size	20	22M	22D	22	20	16	20	22M

Shell Size & Insert Arrg. for:								
Series II JT	10-35	10-98	10-99	12-3	12-4	12-8	12-22	12-35
Series I LJT	11-35	11-98	11-99	13-3	13-4	13-8	13-22	13-35
Series III TV	11-35	11-98	11-99		13-4	13-8		13-35
Service Rating	M	I	I	II	I	I	M	M
# of Contacts	13	6	7	3	4	8	22	22
Contact Size	22D	20	20	16	16	20	22M	22D

Shell Size & Insert Arrg. for:								
Series II JT	12-98	14-5	14-15	14-18	14-19	14-35	14-37	14-68
Series I LJT	13-98	15-5	15-15	15-18	15-19	15-35	15-37	15-68
Series III TV	13-98	15-5	15-15	15-18	15-19	15-35		
Service Rating	I	II	I	I	I	M	M	I
# of Contacts	10	5	14	1	18	19	37	8
Contact Size	20	16	20	16	20	22D	22M	16

Shell Size & Insert Arrg. for:							
Series II JT	14-97	16-6	16-8	16-13	16-26	16-35	16-55
Series I LJT	15-97	17-6	17-8	17-13	17-26	17-35	17-55
Series III TV	15-97	17-6	17-8		17-26	17-35	
Service Rating	I	I	II	I	I	M	M
# of Contacts	8	4	6	8	13	26	55
Contact Size	20	16	12	16	16	20	22D
							22M

HD: High Density HD38999 (use size 23 contacts only)

CONTACT LEGEND

12	16	20	22	22M	22D	23

Hermetic MIL-DTL-38999, Series I LJT, II JT, III TV

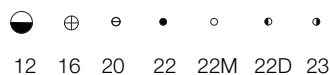
Insert Arrangements

Front face of pin inserts illustrated

Shell Size & Insert Arrg. for:						
Series II JT	16-99	18-11	18-32	18-35	18-66	20-1
Series I LJT	17-99	19-11	19-32	19-35	19-66	21-1
Series III TV	17-99	19-11	19-32	19-35		
Service Rating	I	II	1	M	M	M
# of Contacts	21	11	32	66	66	79
Contact Size	20	16	20	22D	22M	22M

Shell Size & Insert Arrg. for:					
Series II JT	20-11	20-16	20-35	20-39	20-41
Series I LJT	21-11	21-16	21-35	21-39	21-41
Series III TV	21-11	21-16	21-35	21-39	21-41
Service Rating	I	II	M	1	I
# of Contacts	11	16	79	37	41
Contact Size	12	16	22D	20	20

Shell Size & Insert Arrg. for:					
Series II JT	22-1	22-2	22-21	22-32	22-35
Series I LJT	23-1	23-2	23-21	23-32	23-35
Series III TV			23-21		23-35
Service Rating	M	M	II	I	M
Number # Contacts	100	85	21	32	100
Contact Size	22M	22	16	20	22D

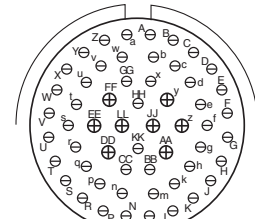
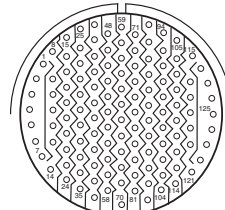
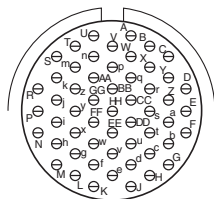
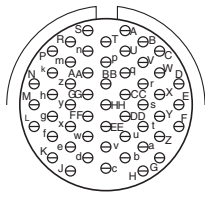


CONTACT LEGEND

Hermetic MIL-DTL-38999, Series I LJT, II JT, III TV

Insert Arrangements

Front face of pin inserts illustrated



Shell Size &
Insert Arrg. for:

Series II JT

Series I LJT

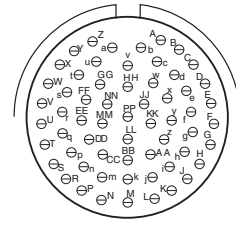
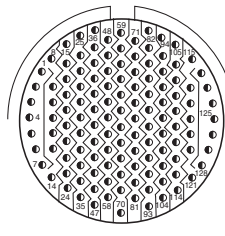
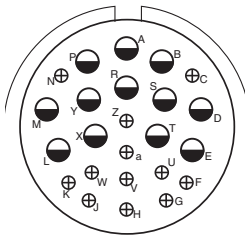
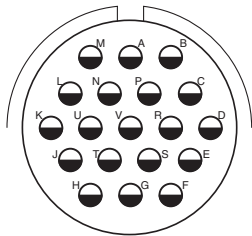
Series III TV

Service Rating

of Contacts

Contact Size

	22-53	22-55	24-1	24-4
	23-53	23-55	25-1	25-4
	23-53	23-55		25-4
	I	I	M	I
	53	55	128	48 8
	20	20	22M	20 16



Shell Size &
Insert Arrg. for:

Series II JT

Series I LJT

Series III TV

Service Rating

of Contacts

Contact Size

	24-19	24-24	24-35	24-61
	25-19	25-24	25-35	25-61
	25-19	25-24	25-35	25-61
	I	I	M	I
	19	12 12	128	61
	12	16 12	22D	20

HD: High Density HD38999 (use size 23 contacts only)

CONTACT LEGEND



Series III MIL-DTL-38999

TRI-START, MIL-DTL-38999, SERIES III
WITH STAINLESS STEEL SHELLS

Amphenol® Tri-Start MIL-DTL-38999* Series III Connectors offer the highest performance capabilities for both general duty and severe environment applications meeting or exceeding MIL-DTL-38999 Series III requirements.

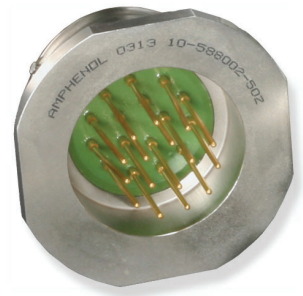
High reliability and increased versatility best describe Amphenol MIL-DTL-38999, Series III circular connectors. Originally designed for the harshest of environments and most demanding of applications, Amphenol MIL-DTL-38999 Series III, Tri-Start connectors continue to evolve in pace with the needs of an ever-changing market.



STAINLESS STEEL
WITH NICKEL
PLATING



PASSIVATED
STAINLESS STEEL



FEATURES:

- **EMI Shielding**
Solid metal-to-metal coupling, grounding fingers, electroless nickel plating, and thicker wall sections provide superior EMI shielding capability of 65dB minimum at 10 GHz
- **Contact Protection**
Recessed pins in this 100% scoop-proof connector minimize potential contact damage
- **Moisture Resistance**
Improved interfacial seal design helps prevent electrolytic erosion of contacts
- **Corrosion Resistance**
Shells of stainless steel with nickel plating withstand a 500 hour salt spray exposure
- **Vibration/Shock**
Operates under severe high temperature vibration, through 200°C
- **Lockwiring Eliminated**
Unique, self-locking, quick coupling connector eliminates lockwiring
- **Quick Coupling**
Completely mates and self-locks in a 360° turn of the coupling nut
- **Hermetic**- air leakage limited to 1×10^{-7} cm³ per second

Hermetic Military

How to Order

MILITARY	DESCRIPTION	COMMERCIAL
D38999/21	Hermetic Box Mounting Receptacle	TVPS02Y, TVPS02YN
D38999/23	Hermetic Jam Nut Receptacle	TVS07Y, TVS07YN
D38999/25	Hermetic Solder Mount Receptacle	TVSI
D38999/27	Hermetic Weld Mounted Receptacle	TVSHI

HOW TO ORDER: MILITARY

1. CONNECTOR TYPE	
38999/	MIL-DTL-38999 III

2. SHELL STYLE	
21	Box Mount Receptacle Hermetic
23	Jam Nut Receptacle Hermetic
25	Solder Mount Receptacle Hermetic
27	Weld Mounted Receptacle Hermetic

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size- Insert Arrangement	5. Contact Type	6. Alternate Keying Position
D38999/	21	Y	G35	P	N

3. SERVICE CLASS				
Military	Finish	RoHS	Material	Material/ Description
N	Stainless Steel w/ Nickel Plate	•	Stainless Steel	Hermetic connectors, corrosion resistant steel, 200°C
Y	Stainless Steel	•	Stainless Steel	Hermetic seal, 200°C passivated stainless steel

4. SHELL SIZE & INSERT ARRANGEMENTS	
Shell Size & Insert Arrangements are on pages 5-6. First number represents Shell Size, second number is the Insert Arrangement.	

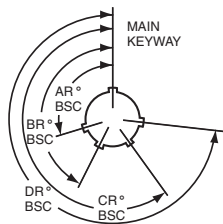
TRIPLE START THREADS									
A	B	C	D	E	F	G	H	J	Mil Shell Size
9	11	13	15	17	19	21	23	25	Amphenol Shell size

5. CONTACT TYPE	
P	500 Cycle Pin Contacts
X	Pin Contacts - Eyelet
C	PC Tail

6. ALTERNATE KEYING POSITION	
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. Master key stays fixed, minor keys rotate. Inserts are not rotated in conjunction with the master key/keyway.	

Shell Size	Key & Keyway Arrangement Identification Letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
A (9)	N*	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
B (11) C (13) D (15)	E	91	131	197	240
	N*	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
E (17) F (19)	D	119	146	176	298
	E	51	141	184	242
	N*	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
G (21) H (23) J (25)	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
	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

RECEPTACLE (FRONT FACE SHOWN)



Hermetic MIL-DTL-38999, Series III TV

How to Order (Commercial)

1. Type & Class	2. Shell Size-Insert Arrg.	3. Contact Type	4. Alternate Position
TVS07Y	11-4	P	N

1. SELECT A TYPE & CLASS

		Passivated (Non-Firewall)	Nickel Plated (Non-Firewall)
RATES	Temperature	200°C	200°C
	Salt Spray	500 Hrs	500 Hrs
	EMI Shielding	-65dB @ 10GHz	-50dB @ 10GHz
	RoHS		

2. SHELL SIZE & INSERT ARRANGEMENTS

See table on page 5-6. First number represents Shell Size, second number is the Insert Arrangement.

3. CONTACT TYPE

P	500 Cycle Pin Contacts
X	Pin Contacts - Eyelet

See pages 16-20 for PCB Hermetic Connector options

Hermetic		TVPS02Y-	TVPS02YN-
	Box Mounting Receptacle		
	Jam Nut Receptacle	TVS07Y-	TVS07YN-
	Solder Mount	TVSIY-	TVSIYN-
	Weld Mounting Receptacle	TVSHIY-	TVSHIYN-

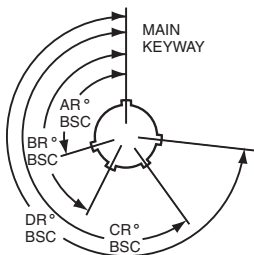
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17 and 19	N*	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
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21, 23, and 25	N*	80	142	196	293
	A	135	170	200	310
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	D	62	145	180	280
	E	79	153	197	272

RECEPTACLE

(FRONT FACE SHOWN)

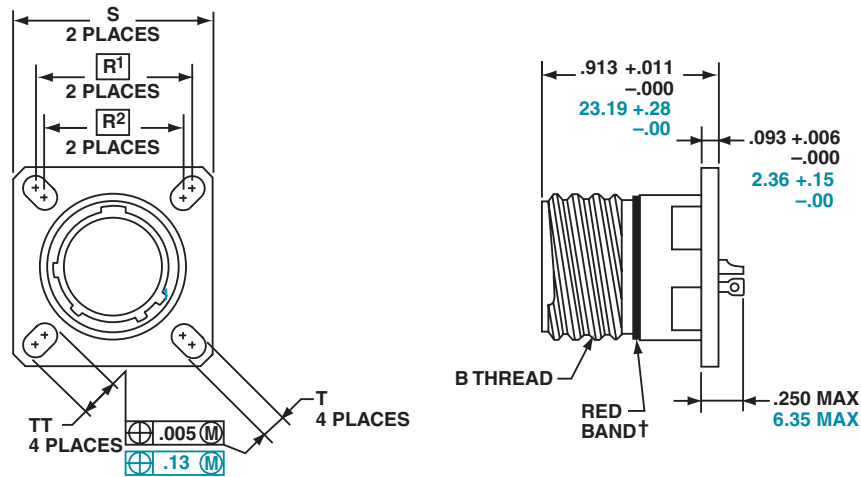


Hermetic Box Mounting Receptacle

Military (D38999/21), Commercial (TVPS02)

MILITARY
D38999/21

COMMERCIAL SS
TVPS02Y
TVPS02YN



† Red band indicates fully mated

NOTE: Consult Amphenol Aerospace for availability of non-glass-sealed versions with printed circuit tail contacts.

Inches

Shell Size	MS Shell Size Coded	B Thread 0.1P-0.3L-TS (Plated)	R1	R2	S ±.010	T ±.008	TT ±.008
9	A	.6250	.719	.594	.938	.128	.216
11	B	.7500	.812	.719	1.031	.128	.194
13	C	.8750	.906	.812	1.125	.128	.194
15	D	1.0000	.969	.906	1.219	.128	.173
17	E	1.1875	1.062	.969	1.312	.128	.194
19	F	1.2500	1.156	1.062	1.438	.128	.194
21	G	1.3750	1.250	1.156	1.562	.128	.194
23	H	1.5000	1.375	1.250	1.688	.154	.242
25	J	1.6250	1.500	1.375	1.812	.154	.242

Millimeters

Shell Size	MS Shell Size Coded	R1	R2	S ±.25	T ±.20	TT ±.20
9	A	18.26	15.09	23.83	3.25	5.49
11	B	20.62	18.26	26.19	3.25	4.93
13	C	23.01	20.62	28.58	3.25	4.93
15	D	24.61	23.01	30.96	3.25	4.39
17	E	26.97	24.61	33.32	3.25	4.93
19	F	29.36	26.97	36.53	3.25	4.93
21	G	31.75	29.36	39.67	3.25	4.93
23	H	34.93	31.75	42.88	3.91	6.15
25	J	38.10	34.93	46.02	3.91	6.15

All dimensions for reference only

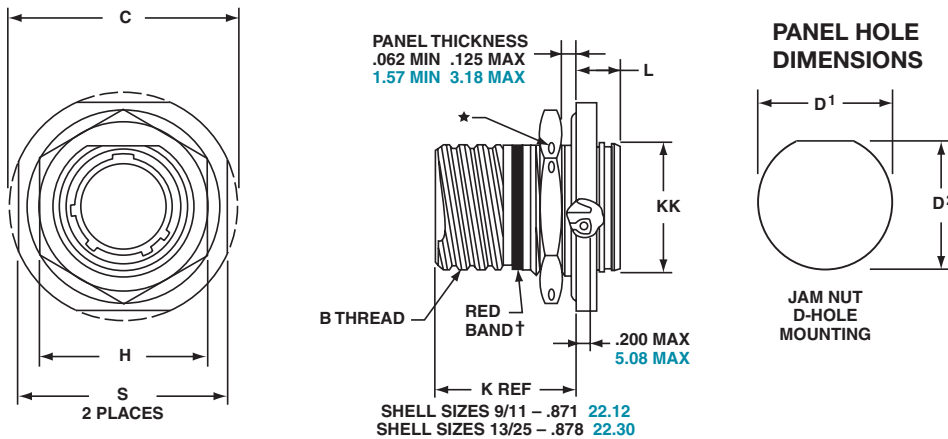
 Designates true position dimensioning

Hermetic Jam Nut Receptacle

Military (D38999/23), Commercial (TVS07)

MILITARY
D38999/23

COMMERCIAL SS
TVS07Y
TVS07YN



†Red band indicates fully mated

*.059 dia min. 1.5 dia. min. 3 lockwire holes Formed lockwire hole design (6 holes) is optional.

Inches

Shell Size	MS Shell Size code	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max	D ¹ +.010 - .000	D ² +.000 - .010	H Hex +.017 - .016	L Max	S ±.010	KK +.011 - .000
9	A	.6250	1.199	.693	.657	.875	.357	1.062	.642
11	B	.7500	1.386	.825	.770	1.000	.357	1.250	.766
13	C	.8750	1.511	1.010	.955	1.188	.357	1.375	.892
15	D	1.0000	1.636	1.135	1.085	1.312	.357	1.500	1.018
17	E	1.1875	1.761	1.260	1.210	1.438	.357	1.625	1.142
19	F	1.2500	1.949	1.385	1.335	1.562	.381	1.812	1.268
21	G	1.3750	2.073	1.510	1.460	1.688	.381	1.938	1.392
23	H	1.5000	2.199	1.635	1.585	1.812	.381	2.062	1.518
25	J	1.6250	2.323	1.760	1.710	2.000	.381	2.188	1.642

Millimeters

Shell Size	MS Shell Size code	C Max	D ¹ +.25 - .00	D ² +.00 - .25	H Hex +.43 - .41	L Max	S ±.25	KK +.28 - .00
9	A	30.45	17.60	16.70	22.23	9.07	26.97	16.31
11	B	35.20	20.96	19.59	25.40	9.07	31.75	19.46
13	C	38.38	25.65	24.26	30.18	9.07	34.93	22.66
15	D	41.55	28.83	27.56	33.32	9.07	38.10	25.86
17	E	44.73	32.01	30.73	36.53	9.07	41.28	29.01
19	F	49.50	35.18	33.91	39.67	9.68	46.02	32.21
21	G	52.65	38.35	37.08	42.80	9.68	49.23	35.36
23	H	55.85	41.53	40.26	46.02	9.68	52.37	38.56
25	J	59.00	44.70	43.43	50.80	9.68	55.58	41.71

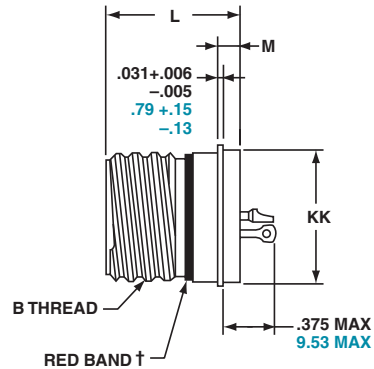
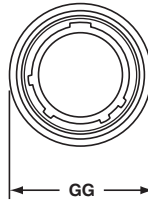
All dimensions for reference only

Hermetic Solder Mounting Receptacle

Military (D38999/25), Commercial (TVSI)

MILITARY
D38999/25

COMMERCIAL SS
TVSIY
TVSIYN



† Red band indicates fully mated

Inches

Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P-0.3L-TS (Plated)	L +.011 -.005	M +.006 -.005	GG Dia. +.011 -.010	KK Dia +.011 -.005
9	A	.6250	.806	.125	.750	.672
11	B	.7500	.806	.125	.844	.781
13	C	.8750	.806	.125	.969	.906
15	D	1.0000	.806	.125	1.094	1.031
17	E	1.1875	.806	.125	1.218	1.156
19	F	1.2500	.806	.125	1.312	1.250
21	G	1.3750	.806	.125	1.438	1.375
23	H	1.5000	.838	.156	1.563	1.500
25	J	1.6250	.838	.156	1.688	1.625

Millimeters

Shell Size	MS Shell Size Code	L +.28 -.00	M +.15 -.13	GG Dia. +.25 -.25	KK Dia +.03 -.13
9	A	20.47	3.18	19.05	17.07
11	B	20.47	3.18	21.44	19.84
13	C	20.47	3.18	24.61	23.01
15	D	20.47	3.18	27.79	26.19
17	E	20.47	3.18	30.94	29.36
19	F	20.47	3.18	33.32	31.75
21	G	20.47	3.18	36.53	34.93
23	H	21.29	3.96	39.70	38.10
25	J	21.29	3.96	42.88	41.28

Hermetic Wall Mounting Receptacle

Military (D38999/27), Commercial (TVSHIY)

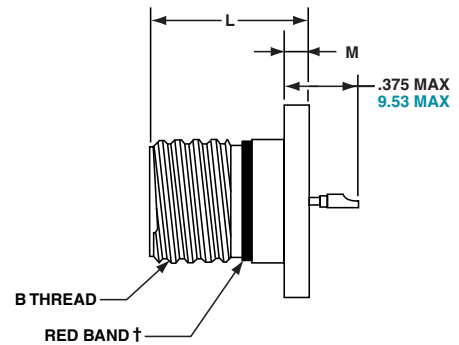
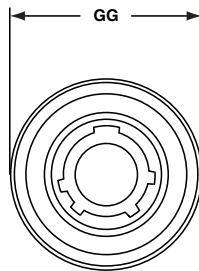
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ONLINE CONFIGURATOR

www.amphenol-aerospace.com

MILITARY
D38999/27

COMMERCIAL SS
TVSHIY
TVSHIYN



† Red band indicates fully mated

Inches

Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P-0.3L-TS (Plated)	L +.011 -.000	M +.006 -.005	GG Dia. +.011 -.010
9	A	.6250	.806	.125	.973
11	B	.7500	.806	.125	1.095
13	C	.8750	.806	.125	1.221
15	D	1.0000	.806	.125	1.347
17	E	1.1875	.806	.125	1.434
19	F	1.2500	.806	.125	1.579
21	G	1.3750	.806	.125	1.721
23	H	1.5000	.838	.156	1.886
25	J	1.6250	.838	.156	1.973

Millimeters

Shell Size	MS Shell Size Code	L +.28 -.00	M +.15 -.13	GG Dia. +.25 -.00
9	A	20.47	3.18	24.71
11	B	20.47	3.18	27.81
13	C	20.47	3.18	31.01
15	D	20.47	3.18	34.21
17	E	20.47	3.18	36.42
19	F	20.47	3.18	40.11
21	G	20.47	3.18	43.71
23	H	21.29	3.96	47.90
25	J	21.29	3.96	50.11

All dimensions for reference only