

D38999 SERIES III - STYLE PCB CONNECTORS

FOR PRINTED CIRCUIT BOARD APPLICATIONS

PDS - 273-5



38999 SERIES III CONNECTORS ARE IDEAL FOR PRINTED CIRCUIT BOARD APPLICATIONS, EITHER WITH RIGID ATTACHMENT OR WITH FLEX PRINT ASSEMBLY ATTACHMENT

Amphenol provides circular connectors with PC Tail contacts. This product data sheet features the 38999 Series III connectors which are ideal for printed circuit board applications, either with rigid attachment or with flex print assembly attachment. For information on other Amphenol circular connectors with PC Tail contacts, consult Amphenol Aerospace.

FEATURES & BENEFITS:

- Connectors meet all applicable requirements of MIL-DTL-38999
- Contacts meet all applicable requirements of AS39029
- All contacts come pre-assembled into the connectors
- Double Flange and Standoff styles available to improve grounding and avoid stress on contacts
- Optional alignment disks make assembly easy
- Available with clinch nuts installed
- Contact pre-tinning options available; see Amphenol Aerospace for details.



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Brian Antalek (Composite, Steel) • Office: +1 (607) 563-5018 • Email: bantalek@amphenol-ao.com

amphenol-aerospace.com • amphenolmao.com

HOW TO ORDER

PART NUMBER KEY EX: TVP00DZ-11-35P (P25)

1. Type	2. Shell Style	3. Service Class	4. Shell Size & Insert Arrangement	5. Contact Type	6. Alternate Position	7. PCB Length
TVP	00	DZ	11-35	P		(P25)

1. Connector Type

TV	Tri-Start, 175°C
TVS	Tri-Start, 200°C
TVP	Tri-Start, Panel Mounted, 175°C
TVPS	Tri-Start, Panel Mounted, 200°C
PTV	Potted Version, Tri-Start, 175°C
PTVS	Potted Version, Tri-Start, 200°C
CTV	Composite, Tri-Start, 175°C
CTVS	Composite, Tri-Start, 200°C
CTVP	Composite, Tri-Start, Panel Mount, 175°C
CTVPS	Composite, Tri-Start, Panel Mount, 200°C

2. Shell Style

02	Box Mount Receptacle
12	Box Mount Receptacle Clinch Nuts
13	Box Mount with Metric Clinch Nuts
00	Wall Mount Receptacle
10	Wall Mount Receptacle Clinch Nuts
11	Wall Mount with Metric Clinch Nuts
40	Wall Mount Receptacle Double Flange
42	Wall Mount with Helicoils in Flange
07	Jam Nut Receptacle
17	Jam Nut with Washout Standoffs
18	Jam Nut Flush Flange
47	Jam Nut Receptacle Double Flange
97	Reduced Flange Jam Nut
98	Reduced Flange Jam Nut with Standoffs
48	Reduced Flange Jam Nut with Double Flange

3. Service Class, Aluminum 175°C

DT	Durmalon: Plated alternative to cadmium, corrosion resistant, 500 hrs. extended salt spray, -50dB@10GHz	
DZ	Black Zinc-Nickel: Alternative to cadmium, 500 hrs. salt spray, conductive, -50dB@10GHz	
RW	Olive Drab Cadmium: 500 hrs. salt spray, -65dB@10GHz	
DW	Corrosion Resistant Olive Drab Cadmium: 1,000 hrs. extended salt spray	

3. Service Class, Aluminum 200°C

RF	Electroless Nickel: 48 hrs. salt spray, -65dB@10GHz	
RB	Marine Bronze: 500 hrs. salt spray, -65dB@10GHz	
DS	AP-93™ Plating Tri-Nickel Alloy: 1,000 hrs. salt spray, intermateable with cadmium	
DB	Black Electroless Nickel: 100 hrs. salt spray	
RB	Marine Bronze: 500 hrs.	

3. Service Class, Composite 175°C

RW	Olive Drab Cadmium: 2,000 hrs. salt spray, -65dB@10GHz	
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3. Service Class, Composite 200°C

RF	Electroless Nickel: 2,000 hrs. salt spray, -65dB@10GHz	
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3. Service Class, Stainless Steel 200°C

RK	Corrosion Resistant Stainless Steel: (Firewall) 500 hrs. salt spray resistance, -65dB@10GHz	
RKN	Corrosion Resistant Passivated Stainless Steel: (Non-Firewall), 500 hrs. salt spray resistance, -65dB@10GHz	
RS	(Non-Hermetic), Nickel plated: Corrosion resistant steel, (Firewall), 500 hrs. salt spray, EMI shielding -65dB @ 10GHz specification min.	
RL	Corrosion Resistant Steel: Nickel Plated, (Non-Firewall) 500 hrs. salt spray, -50dB@10GHz	

4. Shell Size & Insert Arrangement

Refer to Amphenol Insert Arrangement table. Coded numbers not available for size 8 contacts, see Amphenol for how to order.

5. Contact Type

P	Pin Contacts
S	Socket Contacts

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HOW TO ORDER

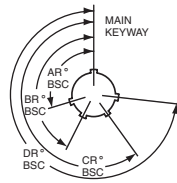
6. ALTERNATE KEYING					
Shell Size	Key & Keyway Arrangement Identification Letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
9	*Blank	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
11, 13, and 15	*Blank	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
17 and 19	*Blank	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
21, 23, and 25	*Blank	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
25L, 33, and 37	*Blank	80	142	188	293
	A	135	170	188	310
	B	49	169	188	244
	C	66	140	188	257
	D	62	145	188	280
25L, 33, and 37	E	79	153	188	272

* Leave blank for Normal Rotation

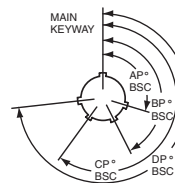
KEY/KEYWAY POSITION

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.

RECEPTACLE
(front face shown)



PLUG
(front face shown)



7. PCB LENGTH

Note: Nominal +/- .040"

Contact Stickout	Pin Contacts	Pin Contacts with Alignment Disk
.150"	(P15)	(P15AD)
.250"	(P25)	(P25AD)
.350"	(P35)	(P35AD)

Contact Stickout	Socket Contacts	Socket Contacts with Alignment Disk
.150"	(S15)	(S15AD)
.250"	(S25)	(S25AD)
.350"	(S35)	(S35AD)

Pre-Tin Options: Add "T"
to end of suffix for Pre-tinned PC tails
Example: (P15T), (S25ADT)

7. PCB LENGTH FOR HD38999 ONLY

9-9, 11-19, 13-32, 15-55, 17-73, 19-88, 21-121, 23-151, 25-187

PCB tail stickout +/- .040 inch	Without Alignment Disk		With Alignment Disc	
	Pins	Sockets	Pins	Sockets
.100" nominal	(P1)	(S1)	(P1AD)	(S1AD)
.150" nominal	(P15)	(S15)	(P15AD)	(S15AD)
.200" nominal	(P2)	(S2)	(P2AD)	(S2AD)
.250" nominal	(P25)	(S25)	(P25AD)	(S25AD)
.300" nominal	(P3)	(S3)	(P3AD)	(S3AD)
.350" nominal	(P35)	(S35)	(P35AD)	(S35AD)

PCB WALL MOUNTING RECEPTACLE (00)

BACK PANEL MOUNTING

Aluminum

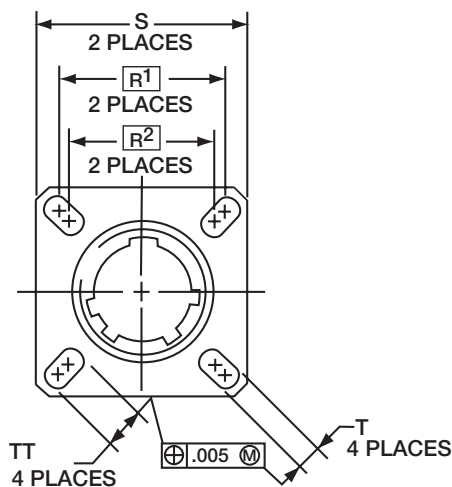
TVPS00RF
TVP00RW
TVP00DT
TVP00DZ
TVPS00DS
TVPS00DB
TVPS00RB
TVP00DW

Steel

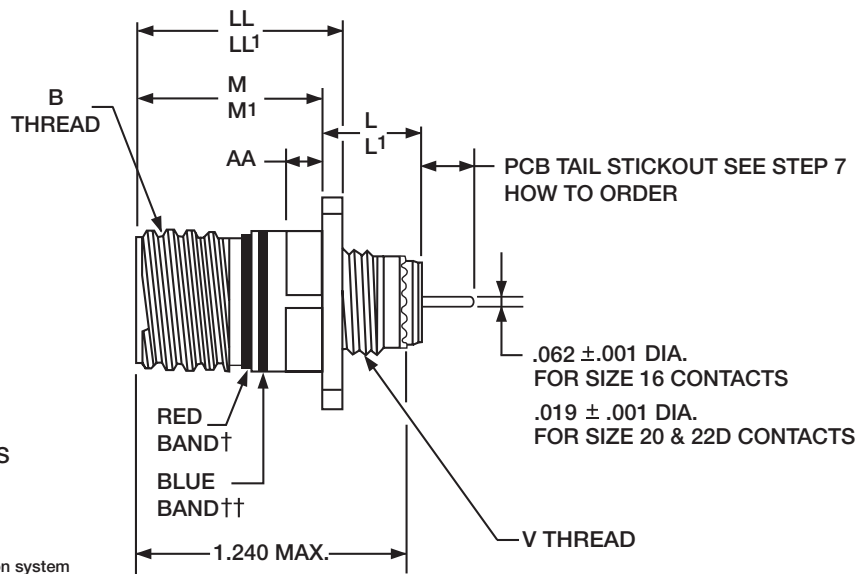
TVPS00RK
TVPS00RKN
TVPS00RL
TVPS00RS

Composite

CTVP00RW
CTVPS00RF



† Red band indicates fully mated
†† Blue band indicates rear release contact retention system



Shell Size	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max. (TV)	L1 Max. (CTV)	M +.000 - .005 (TV)	M1 +.000 - .005 (CTV)	R1	R2	S Max.	T +.008 - .006	V Thread Metric	AA Max. Panel Thickness	LL +.006 - .000 (TV)	LL1 ±.005 (CTV)	TT +.008 - .006
9	.6250	.469	.514	.820	.773	.719	.594	.948	.128	M12X1-6g	.234	.905	.908	.216
11	.7500	.469	.514	.820	.773	.812	.719	1.043	.128	M15X1-6g	.234	.905	.908	.194
13	.8750	.469	.514	.820	.773	.906	.812	1.137	.128	M18X1-6g	.234	.905	.908	.194
15	1.0000	.469	.514	.820	.773	.969	.906	1.232	.128	M22X1-6g	.234	.905	.908	.173
17	1.1875	.469	.514	.820	.773	1.062	.969	1.323	.128	M25X1-6g	.234	.905	.908	.194
19	1.2500	.469	.514	.820	.773	1.156	1.062	1.449	.128	M28X1-6g	.234	.905	.908	.194
21	1.3750	.500	.545	.790	.741	1.250	1.156	1.575	.128	wM31X1-6g	.204	.905	.904	.194
23	1.5000	.500	.545	.790	.741	1.375	1.250	1.701	.154	M34X1-6g	.204	.905	.904	.242
25	1.6250	.500	.545	.790	.741	1.500	1.375	1.823	.154	M37X1-6g	.204	.905	.904	.242

All dimensions for reference only.

Most common options are shown; other options are available.

□ Designates true position dimensioning

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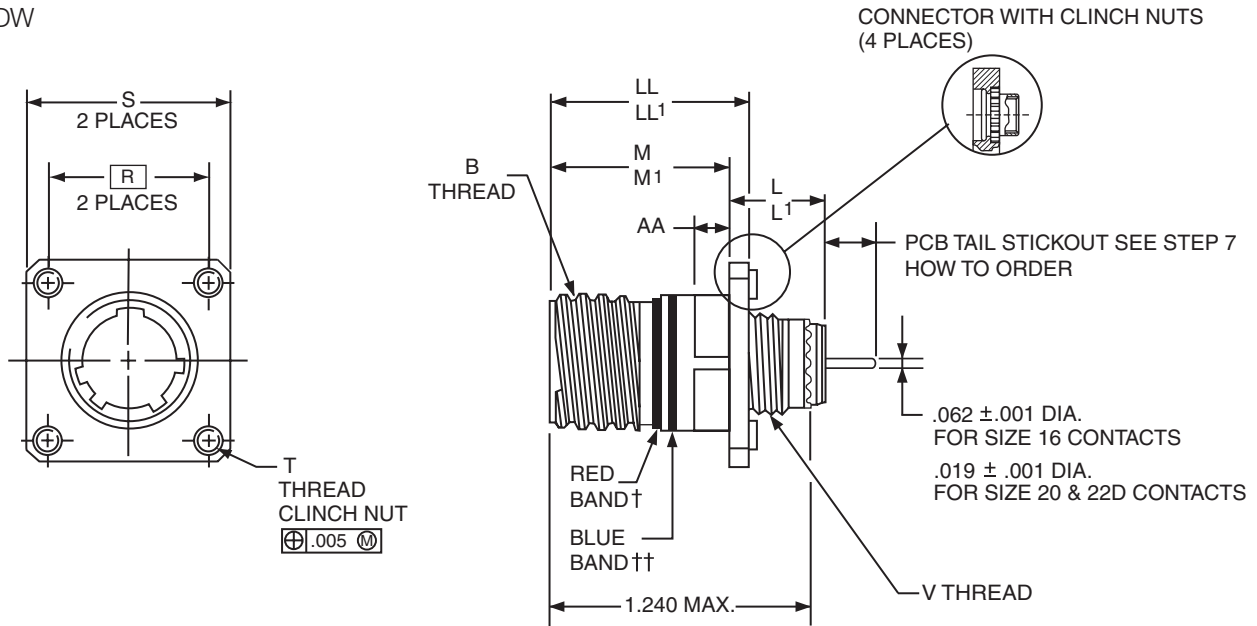
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PCB WALL MOUNTING RECEPTACLE (10)

BACK PANEL MOUNTING (WITH CLINCH NUTS)

Aluminum Steel

- | | |
|----------|-----------|
| TVPS10RF | TVPS10RK |
| TVP10RW | TVPS10RKN |
| TVP10DT | TVPS10RL |
| TVP10DZ | TVPS10RS |
| TVPS10DS | |
| TVPS10DB | |
| TVPS10RB | |
| TVP10DW | |



Shell Size	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max. (TV)	L' Max. (CTV)	M +.000 - .005 (TV)	M' +.000 - .005 (CTV)	R	S Max.	T Thread	V Thread Metric	AA Max. Panel Thickness	LL +.006 - .000 (TV)	LL' ±.005 (CTV)
9	.6250	.469	.514	.820	.773	.719	1.094	.112-40UNC-3B	M12X1-6g	.234	.905	.908
11	.7500	.469	.514	.820	.773	.812	1.187	.112-40UNC-3B	M15X1-6g	.234	.905	.908
13	.8750	.469	.514	.820	.773	.906	1.281	.112-40UNC-3B	M18X1-6g	.234	.905	.908
15	1.0000	.469	.514	.820	.773	.969	1.344	.112-40UNC-3B	M22X1-6g	.234	.905	.908
17	1.1875	.469	.514	.820	.773	1.062	1.437	.112-40UNC-3B	M25X1-6g	.234	.905	.908
19	1.2500	.469	.514	.820	.773	1.156	1.531	.112-40UNC-3B	M28X1-6g	.234	.905	.908
21	1.3750	.500	.545	.790	.741	1.250	1.625	.112-40UNC-3B	M31X1-6g	.204	.905	.904
23	1.5000	.500	.545	.790	.741	1.375	1.750	.138-32UNC-3B	M34X1-6g	.204	.905	.904
25	1.6250	.500	.545	.790	.741	1.500	1.875	.138-32UNC-3B	M37X1-6g	.204	.905	.904

All dimensions for reference only.

Consult Amphenol for more information on ordering connectors with clinch nuts.

Most common options are shown; other options are available.

□ Designates true position dimensioning

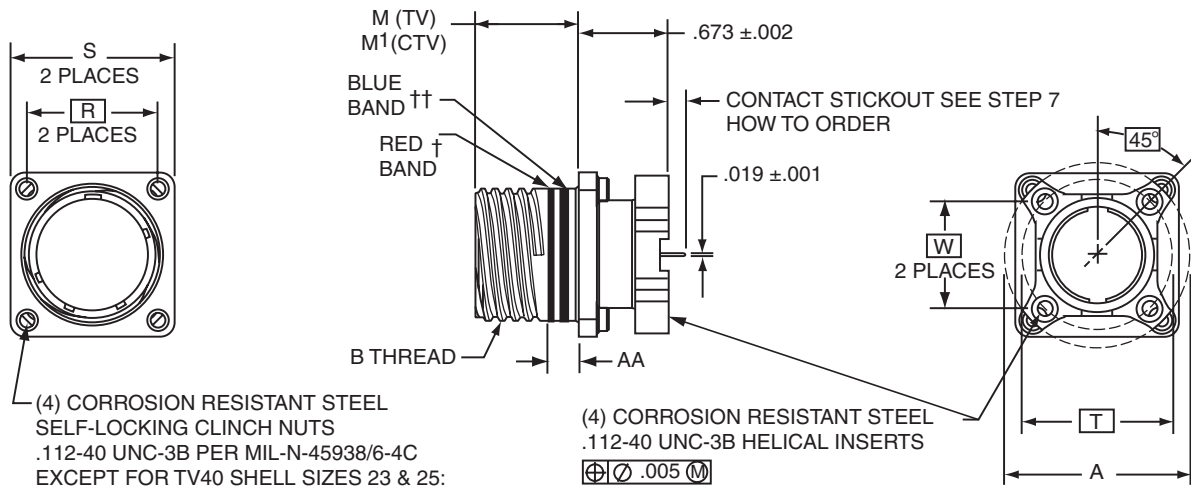
† Red band indicates fully mated

†† Blue band indicates rear release contact retention system

PCB WALL MOUNTING DOUBLE FLANGE RECEPTACLE (40)

Aluminum Steel Composite

TVPS40RF	TVPS40RK	CTVP40RW
TVP40RW	TVPS40RKN	CTVPS40RF
TVP40DT	TVPS40RL	
TVP40DZ	TVPS40RS	
TVPS40DS		
TVPS40DB		
TVPS40RB		
TVP40DW		



⊕/∅ .005 M

Shell Size	MS Shell Size Code (For Ref.)	A Dia. ±.005 (TV)	A Dia. ±.005 (CTV)	B Thread Class 2A (Plated) 0.1P-0.3L-TS	M +.000 - .005	M' ±.003 (CTV)	R (Panel Mount) (CTV)	R (Panel Mount) (TV)	S Max. (TV)	S Max. (CTV)	AA Max. Panel Thickness	PCB Mounting Dimensions	
												T Dia. (TV) TP	W (CTV) TP
9	A	NA	1.016	.6250	.820	.770	.719	N/A	NA	.949	.234	NA	.532
11	B	1.062	1.148	.7500	.820	.770	.812	.766	1.187	1.042	.234	.850	.601
13	C	1.250	1.250	.8750	.820	.770	.906	.859	1.281	1.136	.234	.994	.703
15	D	1.375	1.375	1.0000	.820	.770	.969	.938	1.344	1.230	.234	1.119	.791
17	E	1.500	1.500	1.1875	.820	.770	1.062	1.016	1.437	1.323	.234	1.237	.875
19	F	1.625	1.625	1.2500	.820	.770	1.156	1.110	1.531	1.449	.234	1.379	.975
21	G	1.750	1.750	1.3750	.820	.738	1.250	1.206	1.625	1.573	.204	1.489	1.053
23	H	1.875	1.875	1.5000	.820	.738	1.375	1.312	1.750	1.699	.204	1.619	1.195
25	J	2.000	2.000	1.6250	.820	.738	1.500	1.438	1.875	1.823	.204	1.744	1.233

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† Red band indicates fully mated

†† Blue band indicates rear release contact retention system

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PCB BOX MOUNTING RECEPTACLE (02)

Aluminum

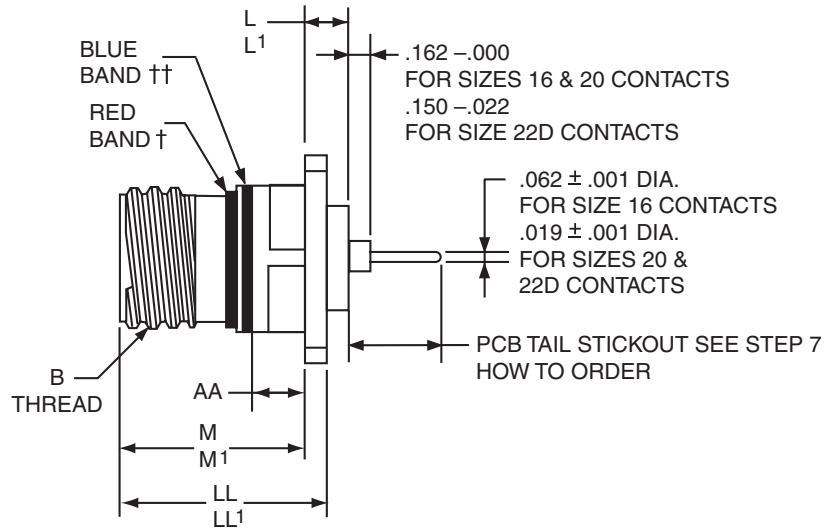
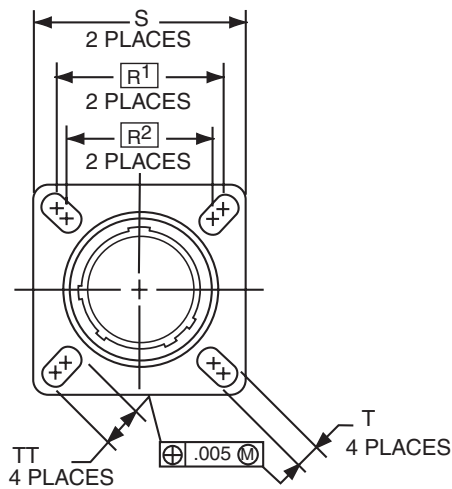
TVPS02RF
TVP02RW
TVP02DT
TVP02DZ
TVPS02DS
TVPS02DB
TVPS02RB
TVP02DW

Steel

TVPS02RK
TVPS02RKN
TVPS02RL
TVPS02RS

Composite

CTVP02RW
CTVPS02RF



Shell Size	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max. (TV)	L' Max. (CTV)	M +.000 - .005 (TV)	M' +.000 - .005 (CTV)	R1	R2	S Max.	T +.008 - .006	AA Max. Panel Thickness	LL +.006 - .000 (TV)	LL' ±.005 (CTV)	TT ±.008
9	.6250	.205	.250	.820	.773	.719	.594	.948	.128	.234	.905	.908	.216
11	.7500	.205	.250	.820	.773	.812	.719	1.043	.128	.234	.905	.908	.194
13	.8750	.205	.250	.820	.773	.906	.812	1.137	.128	.234	.905	.908	.194
15	1.0000	.205	.250	.820	.773	.969	.906	1.232	.128	.234	.905	.908	.173
17	1.1875	.205	.250	.820	.773	1.062	.969	1.323	.128	.234	.905	.908	.194
19	1.2500	.205	.250	.820	.773	1.156	1.062	1.449	.128	.234	.905	.908	.194
21	1.3750	.235	.280	.790	.741	1.250	1.156	1.575	.128	.204	.905	.904	.194
23	1.5000	.235	.280	.790	.741	1.375	1.250	1.701	.154	.204	.905	.904	.242
25	1.6250	.235	.280	.790	.741	1.500	1.375	1.823	.154	.204	.905	.904	.242

All dimensions for reference only.
Most common options are shown; other options are available.

- Designates true position dimensioning
- † Red band indicates fully mated
- †† Blue band indicates rear release contact retention system

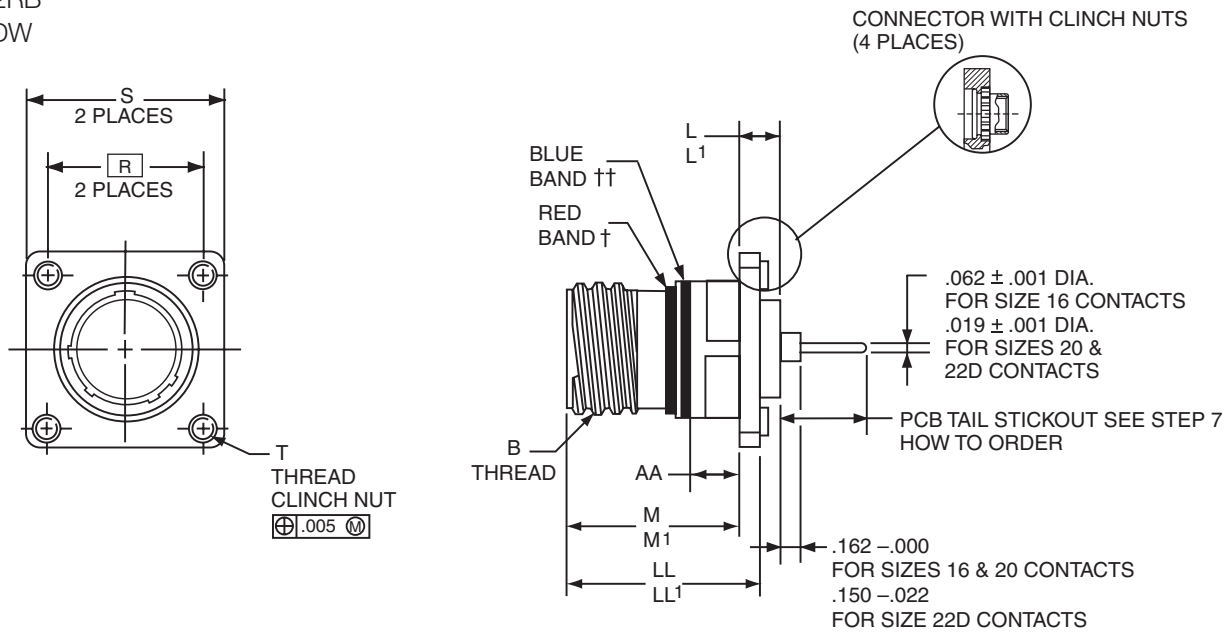
PCB BOX MOUNTING RECEPTACLE (12)

(WITH CLINCH NUTS)

Aluminum

Steel

- | | |
|----------|-----------|
| TVPS12RF | TVPS12RK |
| TVP12RW | TVPS12RKN |
| TVP12DT | TVPS12RL |
| TVP12DZ | TVPS12RS |
| TVPS12DS | |
| TVPS12DB | |
| TVPS12RB | |
| TVP12DW | |



Shell Size	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max. (TV)	L' Max. (CTV)	M +.000 - .005 (TV)	M' +.000 - .005 (CTV)	R	S Max.	T Thread	AA Max. Panel Thickness	LL +.006 - .000 (TV)	LL' +.006 - .000 (CTV)
9	.6250	.205	.250	.820	.773	.719	1.031	.112-40UNC-3B	.234	.905	.908
11	.7500	.205	.250	.820	.773	.812	1.125	.112-40UNC-3B	.234	.905	.908
13	.8750	.205	.250	.820	.773	.906	1.172	.112-40UNC-3B	.234	.905	.908
15	1.0000	.205	.250	.820	.773	.969	1.281	.112-40UNC-3B	.234	.905	.908
17	1.1875	.205	.250	.820	.773	1.062	1.375	.112-40UNC-3B	.234	.905	.908
19	1.2500	.205	.250	.820	.773	1.156	1.469	.112-40UNC-3B	.234	.905	.908
21	1.3750	.235	.280	.790	.741	1.250	1.562	.112-40UNC-3B	.204	.905	.904
23	1.5000	.235	.280	.790	.741	1.375	1.750	.112-40UNC-3B	.204	.905	.904
25	1.6250	.235	.280	.790	.741	1.500	1.875	.112-40UNC-3B	.204	.905	.904

All dimensions for reference only.
Most common options are shown; other options are available.

- Designates true position dimensioning
- † Red band indicates fully mated
- †† Blue band indicates rear release contact retention system

PCB JAM NUT RECEPTACLE (07)

Aluminum

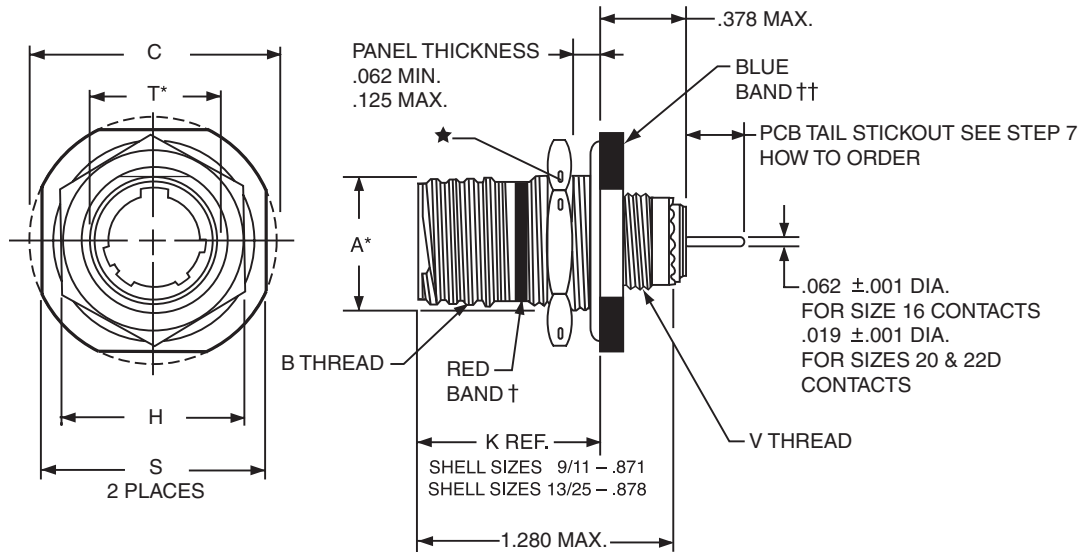
TVS07RF
TV07RW
TV07DT
TV07DZ
TVS07DS
TVS07DB
TVS07RB
TV07DW

Steel

TVS07RK
TVS07RKN
TVS07RL
TVS07RS

Composite

CTV07RW
CTVS07RF



Shell Size	A* +.000 -.010	B Thread Class 2A (Plated) 0.1P-0.3L-TS	C Max.	D1 +.010 -.000	D2 +.010 -.000	H Hex +.017 -.016	S ±.010	T +.010 -.000	V Thread Metric
9	.669	.6250	1.199	.700	.670	.875	1.062	.697	M12X1-6g
11	.769	.7500	1.386	.825	.770	1.000	1.250	.822	M15X1-6g
13	.955	.8750	1.511	1.010	.955	1.188	1.375	1.007	M18X1-6g
15	1.084	1.0000	1.636	1.135	1.085	1.312	1.500	1.134	M22X1-6g
17	1.208	1.1875	1.761	1.260	1.210	1.438	1.625	1.259	M25X1-6g
19	1.333	1.2500	1.949	1.385	1.335	1.562	1.812	1.384	M28X1-6g
21	1.459	1.3750	2.073	1.510	1.460	1.688	1.938	1.507	M31X1-6g
23	1.575	1.5000	2.199	1.635	1.585	1.812	2.062	1.634	M34X1-6g
25	1.709	1.6250	2.323	1.760	1.710	2.000	2.188	1.759	M37X1-6g

All dimensions for reference only.
Most common options are shown;
other options are available.

† Red band indicates fully mated
†† Blue band indicates rear release contact retention system
H .059 dia. min. 3 lockwire holes. Formed lockwire hole design (6 holes) is optional. "D" shaped mounting hole dimensions

PCB JAM NUT DOUBLE FLANGE RECEPTACLES (47)

Aluminum

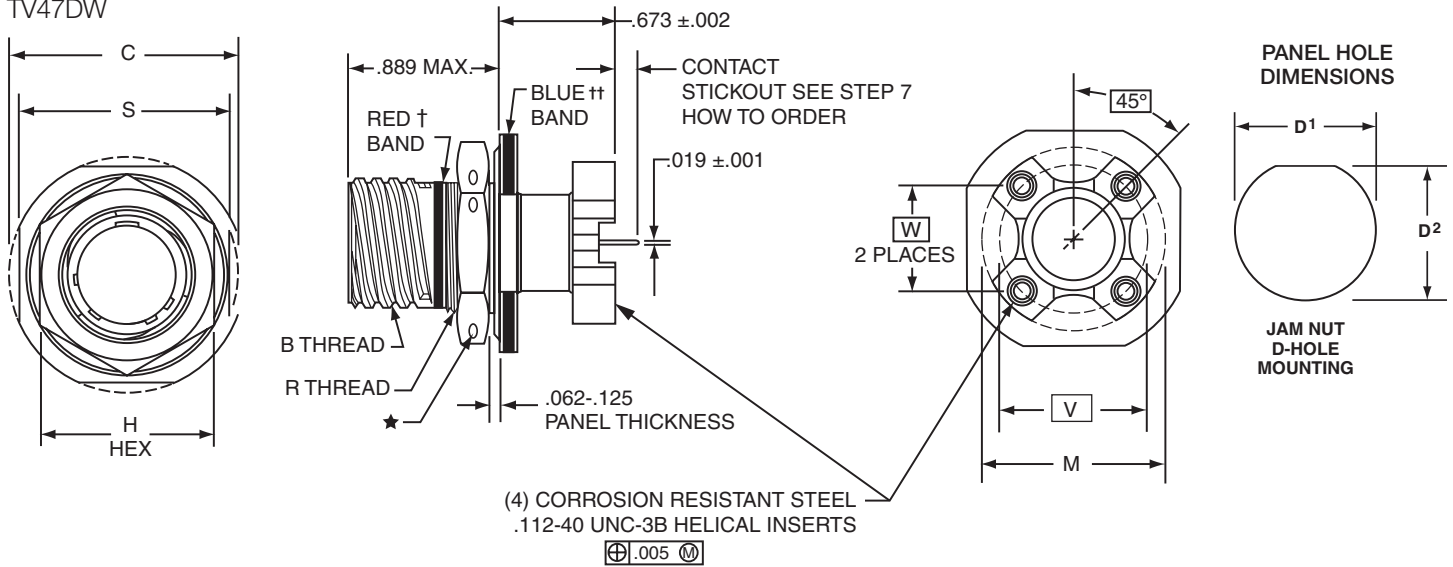
TVS47RF
TV47RW
TV47DT
TV47DZ
TVS47DS
TVS47DB
TVS47RB
TV47DW

Steel

TVS47RK
TVS47RKN
TVS47RL
TVS47RS

Composite

CTV47RW
CTVS47RF



Shell Size	TV47 Coded Shell Size	CTV47 Coded Shell Size	MS Shell Size Code (For Ref.)	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C ±.005 (Jam Nut Flange Dia.)	D ¹ +.010 -0.000	D ² +.000 -0.010	H Hex +.017 -0.016	M Dia. ±.005 (TV)	M Dia. ±.005 (CTV)	R Thread Metric (Plated)	S +.011 -0.010	PCB Mounting Dimensions	
													V Dia. (TV) TP	W (CTV) TP
9	171	151	A	.6250	1.188	.700	.670	.875	1.062	1.016	M17X1-6g0.100R	1.062	.753	.532
11	172	152	B	.7500	1.375	.825	.770	1.000	1.062	1.148	M20X1-6g0.100R	1.250	.850	.601
13	173	153	C	.8750	1.500	1.010	.955	1.188	1.250	1.250	M25X1-6g0.100R	1.375	.994	.703
15	174	154	D	1.0000	1.625	1.135	1.085	1.312	1.375	1.375	M28X1-6g0.100R	1.500	1.119	.791
17	175	155	E	1.1875	1.750	1.260	1.210	1.438	1.500	1.500	M32X1-6g0.100R	1.625	1.237	.875
19	176	156	F	1.2500	1.937	1.385	1.335	1.562	1.625	1.625	M35X1-6g0.100R	1.812	1.379	.975
21	177	157	G	1.3750	2.062	1.510	1.460	1.688	1.750	1.750	M38X1-6g0.100R	1.937	1.489	1.053
23	178	158	H	1.5000	2.188	1.635	1.585	1.812	1.875	1.875	M41X1-6g0.100R	2.062	1.644	1.145
25	179	159	J	1.6250	2.312	1.760	1.710	2.000	2.000	2.000	M44X1-6g0.100R	2.188	1.744	1.233

All dimensions for reference only.

† Red band indicates fully mated

†† Blue band indicates rear release contact retention system.

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

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