

High Vibration *Dualok* Connector

38999 Series III Type Connector for High Vibration

The Dualok* represents the latest in high performance connector designs from Amphenol. Featuring a newly developed locking mechanism, the Dualok plug ensures rock-solid coupling and metal-to-metal bottoming in the most severe vibration environments.

Dualok features and benefits include:

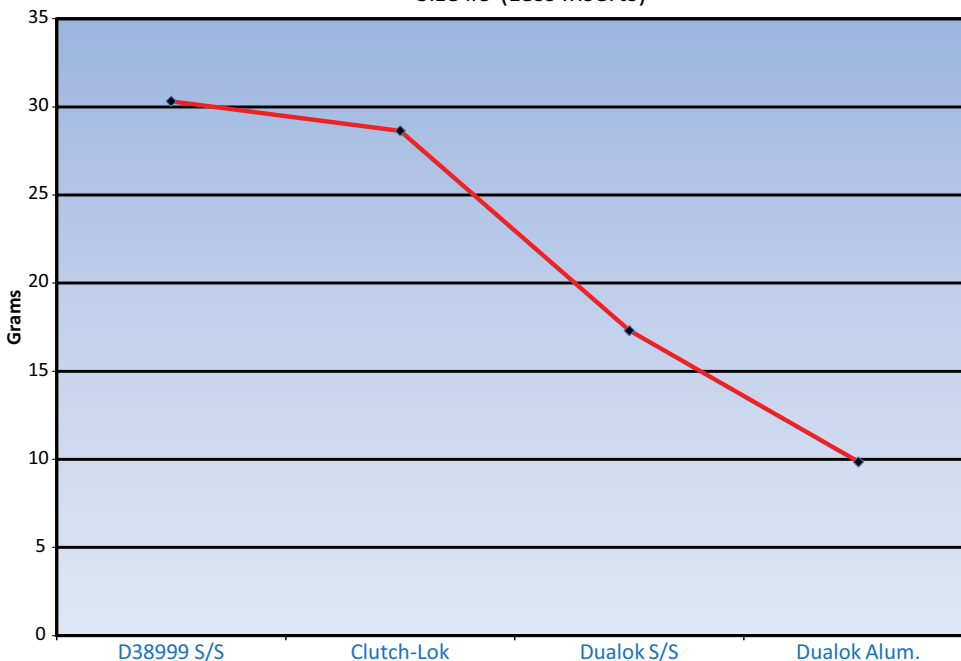
- Mates with standard D38999 receptacles and utilizes standard 38999 inserts.
- Designed to withstand and stay mated under vibration levels that exceed MIL-DTL-38999 levels.
- Dualok stainless steel provides a weight savings of up to 42% compared to standard D38999 stainless steel designs
- Brand new size 7 plugs and receptacle
- Stainless steel, aluminum, composite or aluminum bronze materials of construction
- Available in size 7 – 25
- Offering of new 7-2, 7-3 & 7-4 insert patterns
- Coupling mechanism that does not “settle” under vibration levels exceeding MIL-DTL-38999
- Metal-to-metal bottoming for maximum EMI shielding under extreme vibration



New High Vibration Dualok Connector



Weight Comparison
Size #9 (Less Inserts)



* Patent Pending

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Amphenol
Aerospace

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Dualok

PDS-222-4

Easy Steps to build a part number...

1. 2. 3. 4. 5. 6. 7.

Commercial	Shell Style	Service Class	Shell Size- Insert Arrangement	Contact Type	Alternate Keying Position	Special Variations
TVS	56	RF	9-35	P	B	(XXX)

Step 1. Select a Connector Type

What Shell Material & Temperature rating do you need?

Aluminum 175°C	
TV	Tri-Start 175°C
TVP	Panel mounted receptacle 175°C

Aluminum, Aluminum Bronze & Steel 200°C	
TVS	200°C rated
TVPS	Panel mounted, 200°C rated receptacle

Composite 175°C	
CTV	Composite 175°C
CTVP	Panel mounted composite receptacle 175°C

Composite 200°C	
CTVS	200°C rated, composite
CTVPS	Composite Panel mounted, 200° rated receptacle

Step 2. Select a Shell Style

56 designates Dualok plug. Select a mating receptacle style from the following chart. Currently, shell size 7 is only available in the wall mount receptacle and Dualok plug.

Commercial				Designates
TVP, TVPS, CTVP, CTVPS	TV, CTV	TVS	CTVS	
00				Wall Mount Receptacle
02				Box Mount Receptacle*
	01	01	01	Line Receptacle*
	07	07	07	Jam Nut Receptacle*
		I		Solder Mount Receptacle Hermetic*
		HI		Weld Mounted Receptacle, (Hermetic) Only*
	56	56	56	Straight plug with Dualok

*Available in sizes 9-25; consult Amphenol Aerospace for availability of other sizes.

Step 3. Select a Service Class

Connector Type	Shell Style	Service Class	Shell Size- Insert Arrg.	Contact Type	Alternate Position	Special Variations
		RX				

TV	TVP	CTV	CTVP	CTVS, CTVPS	TVS	TVPS	Finish	Description
					RB	RB	Aluminum Bronze	TBD
							Anodic Coating	■ Non-conductive, anodic coated aluminum, 500 hour salt spray, 200°C.
RX	RX				RF-Composite	RF-Metal	Electroless Nickel	■ Consult Amphenol Aerospace for details, options and availability of non-cadmium or ROHS Compliant Finishes.
					RGF-Composite	RGF-Metal	Electroless Nickel	■ Electroless nickel plated aluminum (composite) optimum EMI shielding effectiveness -65dB @ 10GHz specification min., 48 hour salt spray, 200°C (Composite-2000 hours dynamic salt spray).
							Electroless Nickel	■ Electroless nickel plated ground plane aluminum (composite), 200°C
RGW-Metal	RGW-Metal	RGW-Composite	RGW-Composite				Olive Drab Cadmium	■ Space grade, electroless nickel, 48 hour salt spray, 200°C
								■ Olive drab cadmium plated ground plane aluminum (composite), 175°C
					RK**	RK**	Passivated Stainless Steel	■ Corrosion resistant stainless steel, firewall capability, plus 500 hour salt spray resistance, EMI -45 dB @ 10 GHz specification min., 200°C
					RKN	RKN	Passivated Stainless Steel	■ Corrosion resistant stainless steel, non-firewall capability, plus 500 hour salt spray resistance, EMI -45 dB @ 10 GHz specification min., 200°C
					RL	RL	Stainless Steel w/ Nickel Plate	■ Corrosion resistant steel, electro deposited nickel, 500 hour salt spray, 200°C, non firewall, EMI shielding -65dB @ 10GHz specification min.
RW-Metal	RW-Metal	RW-Composite	RW-Composite				Olive Drab Cadmium	■ Corrosion resistant olive drab cadmium plate aluminum (composite), 500 hour salt spray, EMI Shielding -50 dB @ 10 GHz specification min., 175°C (Composite - 2000 hours dynamic salt spray).
					Y	Y	Stainless Steel	■ Hermetic seal, passivated stainless steel, 200°C
					RS*	RS*	Stainless Steel w/ Nickel Plate	■ (Non-hermetic connectors), Nickel plated, corrosion resistant steel, firewall capability, 500 hour salt spray, 200°, EMI shielding -65dB @ 10GHz specification min.
					YN	YN	Stainless Steel w/ Nickel Plate	■ (Hermetic connectors), Nickel plated corrosion resistant steel, 200°C
DT	DT						Durmalon plated	■ Nickel-PTFE alternative to Cadmium. Corrosion resistant, 500 hour salt spray, EMI -50dB at 10GHz specification min., 175°C
DZ	DZ						Zinc-Nickel Plated	TBD
								■ Zinc-Nickel Alternative to Cadmium, corrosion resistant, 500 hour salt spray, Conductive, -65°C to +175°C, EMI Shielding -50 dB @ 10 GHz specification min.

* Consult Amphenol Aerospace for availability.

**Consult Amphenol Aerospace for availability of Class RK. Coaxial arrangements are not available in Class RK.

Easy Steps to build a part number...cont.

Dualok**Step 4. Select a Shell Size
& Insert Arrangement**

Consult Amphenol Aerospace or see catalog 12-C4.

Double Start Threads		Triple Start Threads										Mil Shell Size
		A	B	C	D	E	F	G	H	J		
7	7H	9	11	13	15	17	19	21	23	25	Amphenol Shell size	

Note: Size 7 and 7H are Double Start Threads only

1.	2.	3.	4.	5.	6.	7.
Connector Type	Shell Style	Service Class	Shell Size-Insert Arrg.	Contact Type	Alternate Position	Special Variations
			23-2			

Shell Size & Insert Arrangement are in the 38999 insert availability section of Amphenol's combined circular catalog 12-C(). First number represents Shell Size, second number is the Insert Arrangement.

Step 5. Select a Contact Type

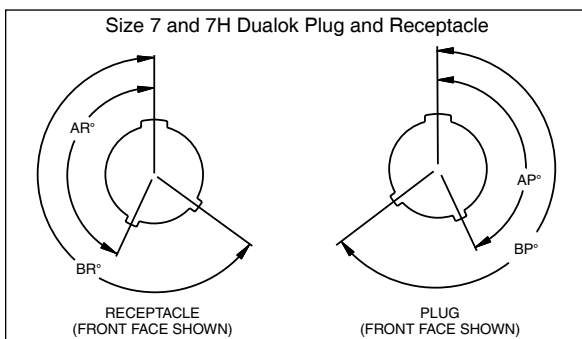
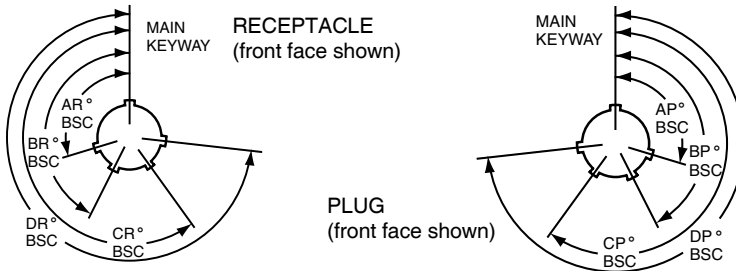
1.	2.	3.	4.	5.	6.	7.
Connector Type	Shell Style	Service Class	Shell Size-Insert Arrg.	Contact Type	Alternate Position	Special Variations
				P		

Designates	
P	Pin Contacts
S	Socket Contacts
H	1500 Cycle Pin Contacts
J	1500 Cycle Socket Contacts
A	Same as "P" except supplied less pin Contacts
B	Same as "S" except supplied less socket contacts (A & B designate nonstandard contact applications)
X	Eyelet contacts, hermetics only

Step 6. Select an Alternate Keying Position

1.	2.	3.	4.	5.	6.	7.
Connector Type	Shell Style	Service Class	Shell Size-Insert Arrg.	Contact Type	Alternate Position	Special Variations
					B	

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.

**Key/Keyway Position**

Shell Size	Key & Keyway Arrangement Identification Letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
7, 7H	N*	120	240		
	A	132	248		
	B	80	230	NA	NA
	C	140	275		
	D	155	234		
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
11, 13, and 15	N*	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	N*	51	141	184	242
	A	80	142	196	293
	B	135	170	200	310
	C	49	169	200	244
	D	66	140	200	257
21, 23, and 25	N*	62	145	180	280
	A	79	153	197	272
	B	80	142	196	293
	C	135	170	200	310
	D	49	169	200	244
	N*	66	140	200	257
	A	62	145	180	280
	B	79	153	197	272
	C	80	142	196	293
	D	135	170	200	310

* An "N" designation is used on D38999 military part number but not on the commercial versions

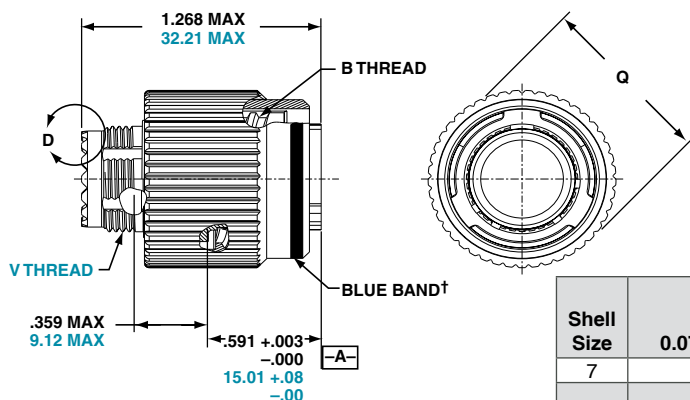
Step 7. Special Variations

Consult Amphenol Aerospace for variations..

1.	2.	3.	4.	5.	6.	7.
Connector Type	Shell Style	Service Class	Shell Size-Insert Arrg.	Contact Type	Alternate Position	Special Variations
						(xxx)

Amphenol
Aerospace

Dualok Straight Plug

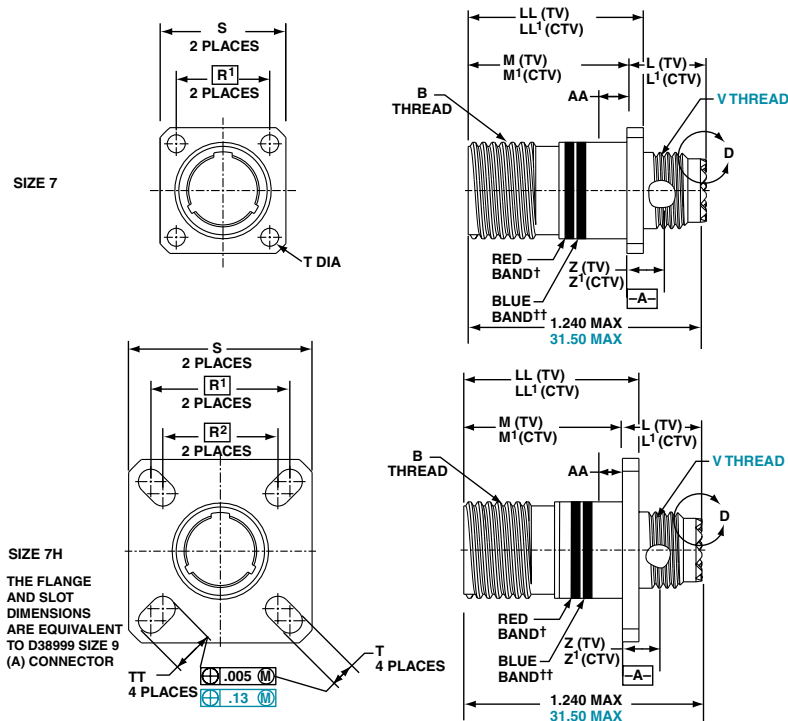
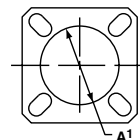
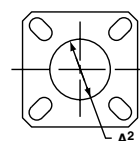


Shell Size	B Thread 0.0714P-.1428L-DS-2B (Plated)	Q Dia. Max.	Q Dia. Max. Metric	V Thread Metric.
7	.5000	.745	18.9	M10X-3g6g
	B Thread 0.1-0.3L-TS-2B (Plated)			
9	.6250	.863	21.8	M12X1-6g
11	.7500	.989	25.0	M15X-16g
13	.8750	1.159	29.4	M18X1-6g
15	1.0000	1.275	32.5	M22X1-6g
17	1.1875	1.405	35.7	M25X1-6g
19	1.2500	1.515	38.5	M28X1-6g
21	1.3750	1.645	41.7	M31X1-6g
23	1.5000	1.675	44.9	M34X1-6g
25	1.6250	1.885	48.0	M37X1-6g

New Mating Wall Mount Receptacle
Shell Size 7, 7H

All dimensions for reference only

□ Designates true position dimensioning

PANEL HOLE
DIMENSIONSBACK PANEL
MOUNTINGFRONT PANEL
MOUNTINGPatent
Pending

Shell Size	B Thread .0714P-.1428L-DS-2A (Plated)	L Max. (TV)	L1 Max. (CTV)	M +.000 / -.005 (TV)	M1 +.000 / -.005 (CTV)	R1	R2	S Max.	T ±.005 / ±.008	Z Max. (TV)	Z1 Max. (CTV)	A1 Back Panel Mount	A2 Front Panel Mount	AA Max. Panel Thickness	LL +.006 / -.000 (TV)	LL1 ±.005 (CTV)	TT ±.008	V Thread Metric
7	.5000	.469	.514	.820	.779	.483	NA	.660	.093 ±.005	.153	.198	.525	.432	.234	.905	.908	N/A	M10X-3g6g
7H	.5000	.469	.514	.820	.779	.812	.594	.948	.129 ±.008	.153	.198	.525	.432	.234	.905	.908	.216	M10X-3g6g

† Red band indicates fully mated

†† Blue band indicates rear release contact retention system

Consult Amphenol Aerospace for availability of 7 & 7H composite receptacles.

Mouser Electronics

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