DEUTSCH CONNECTORS A Step Ahead

MIL-C-38999 Series I

Mil-Spec Connectors & Accessories

DEUTSCH ECD

Defense / Aerospace Operations . . .

is the world's premier manufacturer of electrical interconnection devices for use in defense, aerospace, and commercial applications. Whether you need an interconnection device for a commercial or military aircraft, missile, tank, truck transmission or a host of other applications, Deutsch has the solution you're looking for.

Deutsch ECD Defense Aerospace Operations
5733 W. Whittier Ave., Hemet CA (USA) 92545
Phone 909/765-2200 • FAX 909/922-1544

Cylindrical, High Density Bayonet Coupling Connector Qualified to MIL-C-38999 Series I

The Deutsch Series I version is a long shell, scoop-proof, bayonet coupling connector available in both environment resisting resilient and hermetic types. These Series I connectors are intermateable and interchangeable with all other MIL-C-38999 Series I connectors.

Dielectric withstanding voltage:
(Meets MIL-C-38999, paragraph 3.14)
At sea level: 1800 volts AC (RMS)
At 100,000 ft.: 200 volts AC (RMS)

Insulation resistance:
(Meets MIL-C-38999, paragraph 3.13)
5000 megohms min.at 25°

Thermal shock:
(Meets MIL-C-38999, paragraph 3.8)
After cycling the connector between –65° C and +175° C, it will meet all applicable electrical and mechanical requirements.

Current rating:
(Meets MIL-C-39029, paragraph 1.3.1)

Contact Size	Max. Amps
22D	5
20	7.5
16	13
12	23

Temperature:
(Meets MIL-C-38999, paragraph 3.11)
Operative at temperatures from –65° C to +175° C.

Durability:
(Meets MIL-C-38999, paragraph 3.11)
No electrical or mechanical defects after 500 cycles of engagement and disengagement.

Physical shock:
(Meets MIL-C-38999, paragraph 3.27)
No loosening of parts, cracking or other deleterious results hindering further part operation after 300 G's in each of 3 mutually perpendicular planes.

Contact millivolt drop:
22D — 73 millivolts at 5.0 amps
20 — 55 millivolts at 7.5 amps
16 — 49 millivolts at 135.0 amps
12 — 42 millivolts at 23.0 amps

Corrosion:
(Meets MIL-C-38999, paragraph 3.16)
Meets appropriate electrical and mechanical requirements and shows no exposure of base metal after 500 hours of salt spray.

Vibration:
(Meets MIL-C-38999, paragraph 3.26)

Contact resistance at 25° C:
(Meets MIL-C-39029, paragraph 3.5.4)

Contact & Wire Size	Test Current (Amps)	Millivolt Drop (*)
22D	5	73
20	7.5	55
16	13	49
12	23	42

Usable wire size:
(Meets MIL-C-39029, paragraph 3.4.3.1)

Contact Size	Accepts (AWG)
22D	22-28
20	20-24
16	16-20
12	12&14

Materials:
Shell — aluminum alloy.
Pin contacts — copper alloy.
Inserts — plastic; silicone.

Finish:
Shell — O.D. cad over nickel.
Contacts — gold over nickel.

Grommet sealing range:
(Meets MIL-C-39029, paragraph 3.4.3.1)

Contact Size	Max. Wire O.D.	Min. Wire O.D.
22D	.054	.030
20	.083	.040
16	.109	.065
12	.142	.097

Fluid compatibility:
(Meets MIL-C-38999, paragraph 3.33)
Designed to function in all fluids encountered in any modern military or aerospace environment.

EMI shielding:
(Meets MIL-C-38999, paragraph 3.31)
Effective over a range of 100 MHz to 10 GHz with a minimum 50 dB effectiveness at 10 GHz.

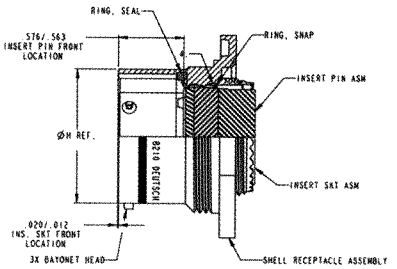
Frequency MHz	Leakage attenuation minimum (dB)
100	90
200	88
300	87
400	85
800	85
1,000	85
1,500	69
2,000	65
3,000	61
4,000	58
6,000	55
10,000	50

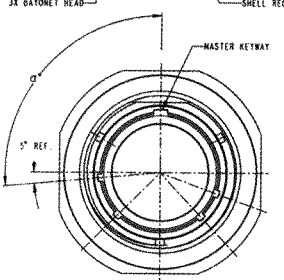
Fluid immersion:
Fluid resistant to many fuels, coolants and solvents per MIL-C-38999.

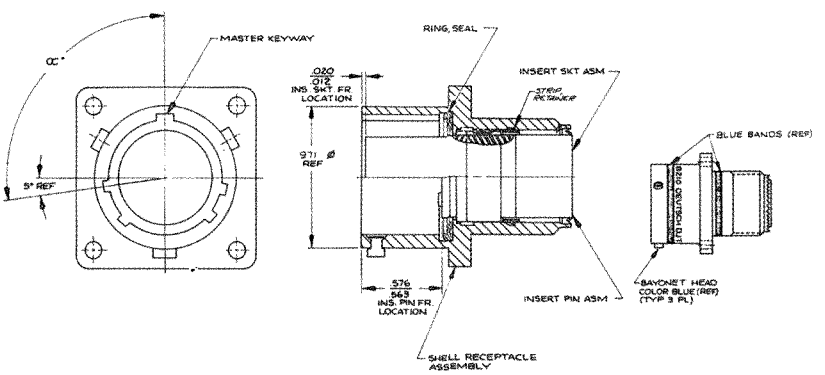
SHELL SIZE	H DIA. REF.
09	.568
11	.696
13	.846
15	.971
17	1.096
19	1.203
21	1.328
23	1.453
25	1.578

SHELL SIZE	KEY POSITION α				
	N	A	B	C	D
09	95°	77°	---	---	113°
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°

DJT14E19-XX



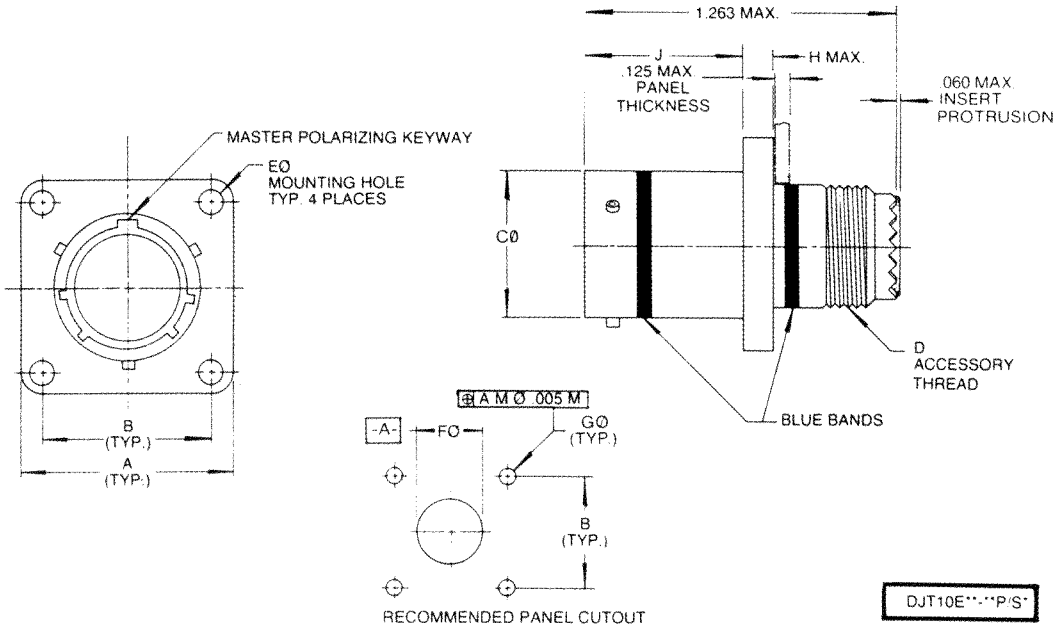




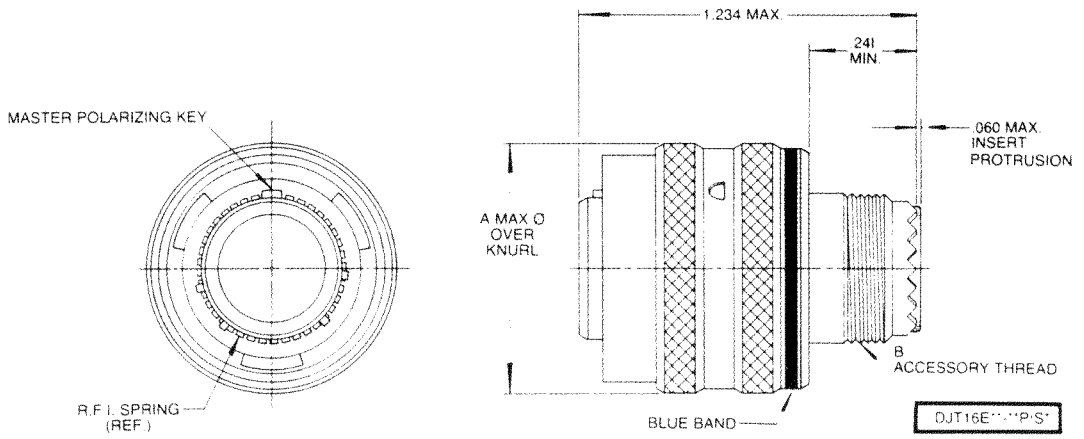
DJT 1 * E ** - ** P * - ****

- MODIFICATIONS
- KEYING POSITIONS
  N, A, B, C, D (POSITION N = NORMAL)
- CONTACT
  P = PIN
  S = SOCKET
- CONTACT ARRANGEMENT
- SHELL SIZE
  9, 11, 13, 15, 17, 19, 21, 23 AND 25
- FINISH
  E = OLIVE DRAB CADMIUM (STANDARD)
  F = NICKEL (RESERVED)
- SHELL STYLE
  0 = RECEPTACLE SQUARE FLANGE
  4 = RECEPTACLE JAM NUT
  5 = PLUG STRAIGHT (REVERSE CAVITY IDENTIFICATION)
  6 = PLUG STRAIGHT
- COUPLING SYSTEM
  BAYONET
- BASIC IDENTIFIER
  DEUTSCH MIL-C-38999 SERIES I (SCOOP PROOF)

Receptacle Outline Dimensions



Plug Outline Dimensions



SHELL SIZE	A ± .020	B ± .005	CØ ± .003	D THREAD UNEF-2A	EØ +.010 -.005	FØ MIN.	GØ ± .005	H MAX.	J +.000 -.005	AØ MAX	B THREAD UNEF-2A
9	.938	.719	.570	.4375-28	.128	.516	.128	.100	.632	.859	.4375-28
11	1.031	.812	.698	.5625-24	.128	.664	.128	.100	.632	.984	.5625-24
13	1.125	.906	.848	.6875-24	.128	.750	.128	.100	.632	1.156	.6875-24
15	1.219	.969	.973	.8125-20	.128	.906	.128	.100	.632	1.281	.8125-20
17	1.312	1.062	1.098	.9375-20	.128	1.016	.128	.100	.632	1.406	.9375-20
19	1.438	1.156	1.205	1.0625-18	.128	1.141	.128	.100	.632	1.516	1.0625-18
21	1.562	1.250	1.330	1.1875-18	.128	1.266	.128	.130	.602	1.641	1.1875-18
23	1.688	1.375	1.455	1.3125-18	.147	1.377	.154	130	602	1.766	1.3125-18
25	1.812	1.500	1.580	1.4375-18	.147	1.484	.154	130	.602	1.891	1.4375-18

DJT Series Insert Arrangements

Contact Arrangements

6#22D Contacts
Insert 9-35

3#20 Contacts
Insert 9-98

5#20 Contacts
Insert 11-5

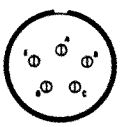
13#22D Contacts
Insert 11-35

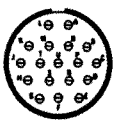
7#20 Contacts
Insert 11-99

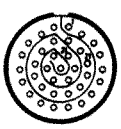
4#16 Contacts
Insert 13-4

22#22D Contact
Insert 13-35

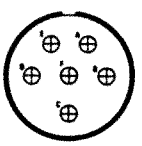
10#20 Contacts
Insert 13-98

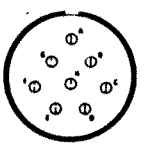

5#16 Contacts
Insert 15-5

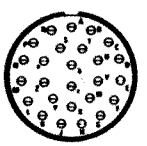

18#20 Contacts
Insert 15-18


37#22D Contacts
Insert 15-35

8#20 Contacts
4#16 Contacts
Insert 15-97


6#12 Contacts
Insert 17-6


8#16 Contacts
Insert 17-8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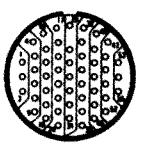
55#22D Contacts
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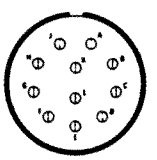
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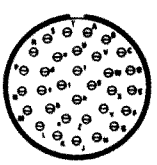
Insert 19-11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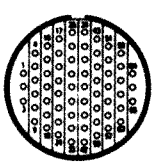
Insert 19-32


66#22D Contacts
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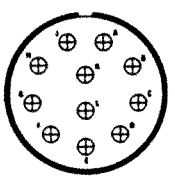
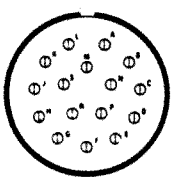

11#12 Contacts
Insert 21-11


16#16 Contacts
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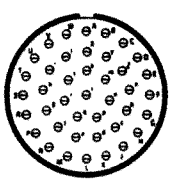
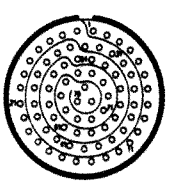
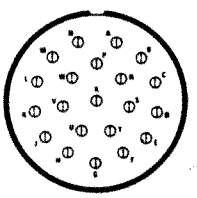
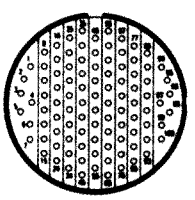

41#20 Contacts
Insert 21-41


79#22D Contacts
Insert 21-35

Deutsch Shell Sizes

DJT	Service Rating	Total Contacts	Contact Size			
			22D	20	16	12
9-35	M	6	6			
9-98	I	3		3		
11-5	I	5		5		
11-35	M	13	13			
11-99	I	7		7		
13-4	I	4			4	
13-35	M	22	22			
13-98	I	10		10		
15-5	II	5			5	
15-18	I	18		18		
15-35	M	37	37			
15-97	I	12		8	4	
17-6	I	6				6
17-8	II	8			8	
17-26	I	26		26		
17-35	M	55	55			
19-11	II	11			11	
19-32	I	32		32		
19-35	M	66	66			
21-11	I	11				11
21-16	II	16			16	
21-41	I	41		41		
21-35	M	79	79			
23-21	II	21			21	
23-53	I	53		53		
23-55	I	55		55		
25-4	I	58		48	8	
25-19	I	19				19
25-24	I	24			12	12
25-29	I	29			29	
25-35	M	128	128			
25-61	I	61		61		


21#16 Contacts
Insert 23-21


100#22D Contacts
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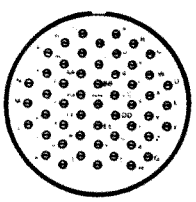
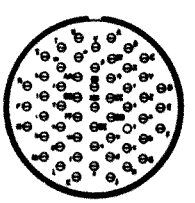

53#20 Contacts
Insert 23-53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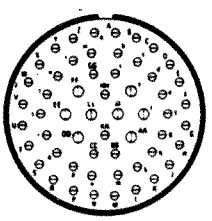
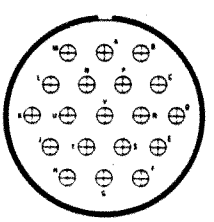
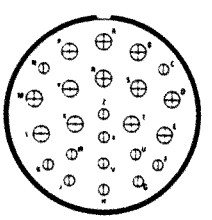
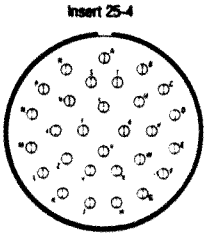
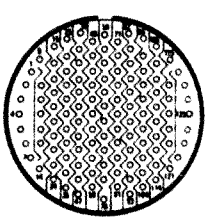
Insert 23-55

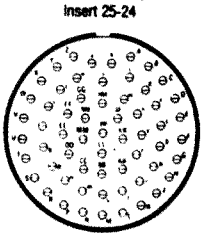

48#20 Contacts
8#16 Contacts
Insert 25-4


19#12 Contacts
Insert 25-19


12#16 Contacts
12#12 Contacts
Insert 25-24


29#16 Contacts
Insert 25-29


128#22D Contacts
Insert 25-35


61#20 Contacts
Insert 25-61

Part Number Cross Reference

MS27466 T 25 B 35 P *

- Alternate Shell Keying: Normal, A, B, C, D (No letter required for normal keying)
- Contact Type: P = Pin; S = Socket
- Insert Arrangement
- Finish: B = Olive drab cadmium D = Fused tin, carbon steel
- Shell Size: 9, 11, 13, 15, 17, 19, 21, 23, 25
- Class: T = Environmental resilient Y = Hermetic sealed
- Specification:
  - MS27466 = Square flange receptacle with crimp contacts
  - MS27467 = Plug with crimp contacts
  - MS27468 = Jam-nut receptacle with crimp contacts
  - MS27470 = Hermetic jam-nut receptacle with solder contacts
  - MS27471 = Hermetic solder mount receptacle with solder contacts

DJT 1 0 E 25 - 35 P N - ***

- Modification (i.e. Less contacts = 090)
- Alternate Shell Keying: Normal, A, B, C, D
- Contact Type: P = Pin; S = Socket
- Insert Arrangement (33 available)
- Shell Size: 9, 11, 13, 15, 17, 19, 21, 23, 25
- Class/Finish: E = Environmental resilient with olive drab cadmium over nickel plating (Class T; Finish B) H = Hermetic with carbon steel and fused tin plating (Class Y; Finish D)
- Shell Style: 0 = Square flange 1 = Solder mount receptacle 4 = Jam nut receptacle 6 = Straight plug
- Coupling System: 1 = Bayonet
- Basic Identifier: Deutsch MIL-C-38999 Series I

Assembly Tools

Wire/contact assembly tools are standard military type insertion/removal tools found in most assembly areas.

Yellow		Size 22D
Red		Size 20
Blue		Size 16
Yellow		Size 12

Contact Size	Insertion/ removal tool	Crimp tool	Crimp tool positioner	Sealing plug (Military P/N)
22D	M81969 14-01 MS3160-23	M22520/7-01	M22520/7-07 M22520-7/05	MS27488-22
20	M81969 14-02	M22520/1-01	M22520/1-04	MS27488-20
16	M81969 14-03	M22520/1-01	M22520/1-04	MS27488-15
12	M81969 14-04	M22520/1-01	M22520/1-04	MS27488-12