

TE Connectivity DEUTSCH ACT Series MIL-DTL-38999 Series III Composite Connectors



INTERMATEABLE WITH SOURIAU CONNECTORS AND ALL MIL-DTL-38999 SERIES III

TE DEUTSCH ACT series MIL-DTL-38999 series III composite connectors offer high density contact arrangements in a miniature circular connector composed of composite materials. ACT connectors meet MIL-38999 and were originally designed as military and aerospace components. The DEUTSCH ACT series is now being used in many applications requiring extremely reliable interconnections. These DEUTSCH connectors are quick-mating, environmentally-sealed, triple-lead threaded, have a self-locking coupling, and are EMI-RFI-shielded. A variety of D38999 backshells are available. For full product details on the DEUTSCH ACT series MIL-DTL-38999 series III composite connectors, please see the specifications below.

APPLICATIONS

- High-performance military aircraft
- Commercial aircraft
- Communications equipment
- Armored personnel carriers & tanks
- High temperature industrial equipment
- Missiles
- Shipboard

FEATURES

- High reliability
- Outstanding/RFI shielding protection
- High density
- Self-locking connector systems
- MIL-DTL-38999
- Scoop-proof contact protection
- Light-weight

MATERIALS AND FINISHES

Shell	Composite
Shell Plating	Electroless nickel and olive drab chromate over nickel
Contacts	Copper alloy
Contact Platings	50u" gold plated
Insulator	Rigid plastic dielectric
Seals	Fluorinated silicone based elastomer

ELECTRICAL DATA

Wire Range Sizes	12-24AWG
Insulation Resistance	5000 Megaohms minimum at 77°F (25°C)

Contact Resistance Of Mated Contacts End To End

CONTACT SIZE	MAXIMUM MILLIVOLT DROP
22D	40
20	35
16	25
12	25

Test Voltage ac rms

SERVICE RATING	SEA LEVEL		100,000 FEET ALTITUDE	
	MATED	UNMATED	MATED	UNMATED
M	1300	1300	800	200
N	1000	1000	600	200
I	1800	1800	1000	200
II	2300	2300	1000	200

Current Rating

WIRE SIZE	CONTACT SIZE	MAX. CURRENT FOR TEST IN AMPS	POTENTIAL DROP MILLIVOLT AT 77°F (25°C)
24	20	3	<45
20	20	7.5	<55
20	16	7.5	<45
16	16	13	<50
14	12	17	<45
12	12	23	<50

MECHANICAL DATA

Operating Temperature	J - Olive drab composite -65°C to +175°C (-85°F to +347°F) M - Electroless nickel composite -65°C to +200°C (-85°F to +392°F)
Sealing	Against sand, dust per MIL-STD-202 & ice resistance

MECHANICAL DATA

Wire Sealing Range

CONTACT SIZE	MINIMUM		MAXIMUM	
	INCHES	MM	INCHES	MM
22D	0.030	0.76	0.054	1.37
20	0.040	1.02	0.83	2.11
16	0.065	1.65	0.109	2.77
12	0.097	2.46	0.142	3.61
8 (Coax)	0.135	3.43	0.155	3.94
8 (Twinax)	0.124	3.15	0.134	3.4

Insulation Strip Length

CONTACT SIZE	STRIP LENGTH	
	INCHES	MM
22D	0.125	3.18
20	0.188	4.77
16	0.188	4.77
12	0.188	4.77

Mating Life	1500 mating cycle with high mating cycle, 500 mating cycle with typical P and S contacts
Salt Spray	2000 hours per MIL-STD-1344A method 1001 condition C
Temp Durability	J - Olive drab composite +175°C (+347°F) M - Electroless nickel composite +200°C (+392°F)
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per MIL-STD-1344A Method 1016 condition a-1
Sine Vibration	60g at -55°C per MIL-DTL-38999L 4.5.23.2.1
Random Vibration	49.5 grms at ambient temperatures
Shock	300 grms
EMI Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 50dB
Contact Type	Crimp, fiber optic, coax, twinax, or printed circuit
Number of Circuits	2 to 128
Contact Insertion	Rear insertion/Rear extraction with simple plastic or high quality metal hand tools.
Polarization	Five keyways with optional master keyway rotations (Note insert and main keyways remain fixed)
Approvals	MIL-DTL-38999

Contact Retention

CONTACT SIZE	RETENTION AXIAL LOAD +/- 10 PERCENT		SEPARATION FORCE MINIMUM (INITIAL)	
	NEWTONS	LBS.	NEWTONS	OUNCES
22D	44	10	0.19	0.7
20	15	67	0.19	0.7
16	25	111	0.56	2
12	25	111	0.83	3
8	25	111	1.39	5
8 Twinax	25	111	1.39	5