

Amphenol JT MIL-DTL-38999 Series II



LIGHT-WEIGHT, SPACE-SAVING DESIGN

Amphenol's MIL-DTL-38999 series II JT miniature connectors offer high-density contact arrangements in a small size. They were designed for high-performance requirements, including military and commercial aviation applications. They are environmentally-sealed and have a wide operating temperature range.

- Intermateable with Deutsch, ITT Cannon, Souriau and all MIL-DTL-38999 series II connectors
- Formerly MIL-C-38999

APPLICATIONS

- High-performance military aircraft
- Commercial airlines
- Communications equipment
- Missiles
- Test equipment
- Ships

FEATURES

HIGH-RELIABILITY

MIL-DTL-38999 series II - JT style connectors are used in performance aircraft that demand reliable connections in some of the most rigorous environments. The connectors must perform flawlessly under wide temperature ranges, high vibrations, and be resistant to a vast array of contaminants.

LOW-PROFILE CONNECTOR DESIGN

JT's require a fraction of the space needed to mate most other high-performance connectors, permitting use in areas that would be impossible for other mating systems.

LIGHT-WEIGHT

Today's aircraft designs require connectors that are very light-weight. Saving weight on the connector systems allows the aircraft to carry more fuel, maximizing its range or payload-carrying capacity.

HIGH-DENSITY CONNECTORS

JT connectors offer up to 128 contacts per connector. Ideally-suited for the demands of today's digital electronics that are used on fly-by wire aircraft, advanced robotics, and critical industrial equipment.

OPERATES AT EXTREME TEMPERATURES

These connectors will operate in temperatures from -85°F to +392°F (-65°C to +200°C)

QUICK-MATING COUPLING SYSTEMS

Three-point bayonet coupling nuts provide fast, one-third-turn connector mating. Mating is easily verified with an audible and tactile "click" and a bayonet pin sighting hole located in the coupling nut.

BROAD RANGE OF MILITARY AND COMMERCIAL ACCESSORIES

Many military-standard endbells to MIL-C-85049 specifications and a wide array of cable termination styles are available. Straight, 45- and 90-degree endbells come in many styles from low-cost, standard clamp to shielded, environmentally-sealed.

MIL-DTL-38999 APPROVED

JT's are fully-intermateable and intermountable with all other MIL-DTL-38999 series II connectors.

TECHNICAL
SPECIFICATIONS

MATERIALS AND FINISHES

Shell	Aluminum alloy
Platings	A - Clear chromate over cadmium over electroless nickel per QQ-P-416 B - Olive drab chromate over cadmium over electroless nickel per QQ-P-416 F - Electroless nickel per QQ-N-290 C - Hard, anodic, non-conductive in accordance with MIL-A-862 W52 - Olive drab zinc cobalt
Contacts	Copper alloy
Plating	Gold-plated, 50 microinches per MIL-G-45204 type II, grade C, class 1
Insulator	Hard dielectric wafer that contains metal retention tines for high-reliability retention of crimp contacts
Grommet & Seals	Silicone-based elastomer
Grounding Springs	Beryllium copper (Grounded plug only)

ELECTRICAL DATA

Operating Voltage & Test Voltage (unmated condition)

TEST VOLTAGES	N	SERVICE RATING		
		M	I	II
SEA LEVEL	1000	1300	1800	2300
100,000 FEET	200	200	200	200

Current Rating by Contact Size & Wire Accommodation (Test Amps)

WIRE SIZE	22D	22M*	22 *	20	16	12
28	1.5	1.5	-	-	-	-
26	2.0	2.0	2.0	-	-	-
24	3.0	3.0	3.0	3.0	-	-
22	5.0	-	5.0	5.0	-	-
20	-	-	-	7.5	7.5	-
18	-	-	-	-	10.0	-
16	-	-	-	-	13.0	-
14	-	-	-	-	-	17.0
12	-	-	-	-	-	23.0

Contact Resistance of Mated Contacts End-to-End

CONTACT SIZE	MAXIMUM MILLIVOLT DROP
22D	73
22M*	45
22*	73
20	55
16	49
12	42

Insulation Resistance 5,000 megohms minimum

MECHANICAL

Operating Temperature	A - Plating -65°C to 150°C (-85°F to 302°F) B - Plating -65°C to 175°C (-85°F to 347°F) F - Plating -65°C to 200°C (-85°F to 392°F) C - Anodic (non-conductive) -65°C to 200°C (-85°F to 392°F) W52 - Plating -65°C to 150°C (-85°F to 302°F)
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Sealing Against sand, dust per MIL-STD-202 & ice resistance

Wire Sealing Range

CONTACT SIZE	MINIMUM INCHES	MAXIMUM INCHES	MINIMUM MM	MAXIMUM MM
22D	0.030	0.054	0.76	1.37
22M*	0.030	0.050	0.76	1.27
22*	0.034	0.060	0.60	1.52
20	0.040	0.083	1.02	2.11
16	0.065	0.109	1.65	2.77
12	0.097	0.142	2.46	3.61

Insulation Strip Length	CONTACT SIZE	STRIP LENGTH
	22*, 22D or 22M*	.125 (3.18)
	20	.188 (4.77)
	16	.188 (4.77)
	12	.188 (4.77)

Mating Life	500 cycles minimum: 250 for plug with grounding fingers (JTG06)
Salt Spray	Finish A: 48-hour per MIL-STD-1344A method 1001 condition B Finish B: 500-hour per MIL-STD-1344A method 1001 condition C Finish F: 48-hour per MIL-STD-1344A method 1001 condition B Finish C: 500-hour per MIL-STD-1344A method 1001 condition C Finish W52: 48-hour
Heat	Finish A: 150°C (302°F) Finish B: 175°C (347°F) Finish F: 200°C (392°F) 1000 hours to MIL-STD-1344 method 1005 Finish C: 200°C (392°F) Finish W52: 175°C (347°F)
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per MIL-STD-1344A Method 1016 condition A-1
Sine Vibration	Not applicable
Random Vibration	43.7 grms at ambient temperatures
Shock	300g ±15% for 3 ±1 milliseconds per MIL-DTL-38999L 4.7.23
EMI-Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 45dB
Contact Type	Crimp, fibre 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.
Contact Retention	Per MIL-C-38999L tested to MIL-STD-1344A method 2007

CONTACT	AXIAL LOAD NEWTONS ±10%	AXIAL LOAD POUNDS ±10%
22*, 22D, 22M*	44	10
20	67	15
16	111	25
12	111	25

Polarization	Three-point bayonet coupling, five keyways with optional master keyway rotations, note insert and four fixed minor keyways.
Approvals	MIL-DTL-38999L

* Inactive for new designs

All dimensions in inches (millimeters in parenthesis)

CROSS-SECTION

