

ITT Cannon KJL Series MIL-DTL-38999 Series I Connectors



INTERMATEABLE WITH SOURIAU CONNECTORS & ALL MIL-DTL-38999 SERIES I

ITT Cannon KJL series MIL-DTL-38999 series I connectors offer high-density contact arrangements in a light-weight miniature circular connector. ITT Cannon KJL series connectors are an industry standard for military and aerospace applications. The KJL series has quick-mating, three-point bayonet coupling, is environmentally-sealed, and operates across a wide temperature range. KJL series connectors are intermateable with Souriau connectors and all MIL-DTL-38999 series I connectors. A variety of D38999 backshells are available for these mil spec ITT Cannon plugs. Mil spec part number prefixes include: MS27466, MS27467, MS27468, MS27496, MS27505, and MS27656. For full details on ITT Cannon MIL-DTL-38999 series I connectors, please see the product specifications below.

APPLICATIONS

- High performance military aircraft
- Commercial airlines
- Communications equipment
- Armored personnel carriers & tanks
- Missiles
- Shipboard
- Medical instrumentation
- High-reliability test equipment

FEATURES

QUICK-MATING

A three-point bayonet coupling system not only makes the KJLs quick-mating but also provides an audible and tactile “click,” along with visual verification of mating via a sighting hole and high-visibility, bright blue bayonet pins.

SHIELDED INTERCONNECT

KJL plugs feature high-quality grounding springs that provide 360-degrees of EMI/RFI-shielding protection. These springs ground the barrel of the KJL plugs to the inside wall of the KJL receptacles with a wiping action that offers effective protection from reception or transmission of electronic noise.

MANY CONTACT LAYOUTS AND STYLES

KJL connectors come in a wide variety of contact sizes and layouts up to 128 contacts. Printed circuit board, fiber optic, thermocouple, and coax style contacts are available for special applications.

UTILIZES HIGH-QUALITY MILITARY CONTACTS

For standard applications, KJLs come with crimp-style military contacts designed to resist bending and provide reliable performance under the most rigorous conditions.

CORROSION-RESISTANT

KJLs are available with cadmium over nickel plating that has met and passed the 500 hour military salt spray corrosion tests.

FULL METAL CONTACT RETENTION CLIPS

Cannon’s KJL connectors utilize full metal retention clips in their insulators, which assures the highest level of serviceability and unparalleled contact retention.

MATERIALS & FINISHES

Shell	Aluminum alloy
Bayonet Pins	Passivated stainless steel per QQ-S-763
Plating	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 (N - Commercial)
Contacts	Copper alloy
Platings	Gold plate, 50 microinches per MIL-G-45204 type II, grade C, class 1
Insulator	Hard plastic wafer which contains metal retention tines for high-reliability retention of crimp contacts
Grommet & Seals	Silicone-based elastomer
Grommet & Springs	Beryllium copper (grounded plug only)

ELECTRICAL DATA

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

Current Rating by contact size and 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 / WIRE SIZE	MAXIMUM MILLIVOLT DROP
22D	73
22M*	45
22*	73
20	55
16	49
12	42

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 (N) Plating -65°C to 200°C (-85°F to 392°F)

Sealing Against sand, dust per MIL-STD-202 & ice

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	0.86	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

* Inactive for new designs

TECH SPECS

Insulation Strip Lengths:	CONTACT SIZE	STRIP LENGTH INCHES (MM)	
	22*, 22D OR 22M*	.125 (3.18)	
	20	.188 (4.77)	
	16	.188 (4.77)	
	12	.188 (4.77)	
Mating Life	500 cycles minimum		
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		
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		
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per MIL-STD-1344A Method 1016 condition a-1		
Sine Vibration	30g at ambient temperature with simulated accessory load		
Random Vibration	49.5 grms at ambient temperatures		
Shock	300g ±15% half sine wave magnitude for 3 ±1 milliseconds		
EMI Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 50dB effectiveness		
Contact Type	Crimp, fiber optic, coax, twinax, or printed circuit		
Number of Circuits	3 to 128		
Contact Insertion	Insertion from rear of connector with simple plastic or high-quality metal hand tool. Extraction from rear with simple plastic or high-quality metal hand tools.		
Contact Retention	Per MIL-DTL-38999 tested to MIL-STD-1344A method 2007		
	CONTACT SIZE	AXIAL LOAD NEWTONS ±10%	AXIAL LOAD POUNDS ±10%
	22*, 22D OR 22M*	44	10
	20	67	15
	16	112	25
	12	111	25
Polarization	Five keyways with optional minor keyways rotation (Note insert and main keyway remain fixed)		
Approvals/Specifications	• MIL-DTL-38999		

CROSS SECTION

