cannon

MIL-DTL-38999 Connectors



ITT

ENGINEERED FOR LIFE

Cannon MIL-DTL-38999 Series I, II, III Connectors

ITT Cannon connectors set the industry standard for performance and reliability in the most demanding conditions and harshest environments. Our MIL-DTL-38999 Series I, II, III Connectors are designed to withstand the extreme shock, exposure and vibration that are commonplace in Defense and Commercial applications.

Our extensive track record serving military customers provides us with the experience to offer lightweight, space-saving solutions, coupled with high bandwidth and high power for severe service application needs. Our history, coupled with unparalleled engineering and testing resources, has established ITT Cannon as one of the premier providers of interconnect solutions worldwide.

With a proven track record for engineering and manufacturing excellence spanning 100 years, ITT Cannon will continue to deliver a broad range of innovative products and solutions that enable our customers to meet their most demanding design requirements, where impeccable reliability and safety are mandatory.







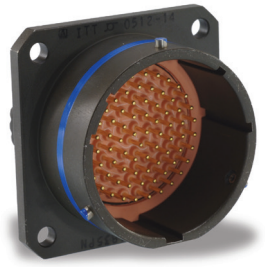


Example Application Areas

- Defense
  - Military aircraft
  - Military communication systems
  - Hand held and vehicle platforms
  - Military ground support systems
  - Military computer systems
  - Harsh environment platforms
  - Blind mate applications
  - High density, low signal platforms
  - Hand held and vehicle platforms
  - Unmanned systems
- Aerospace
  - Aircraft engines
  - General electric testing equipment
  - Commercial business aviation
  - Aerospace launch vehicles

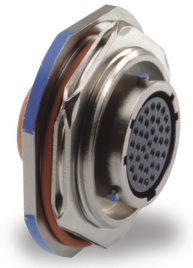
MIL-DTL-38999 Series: Precision Engineered, Lightweight & Rugged

ITT Cannon's MIL-DTL-38999 Series I, II, III Connectors are designed to tackle the most extreme conditions with exceptional versatility in the harshest environments. Small, lightweight and highly reliable, our D38999 connectors deliver consistency and performance when it matters most.



D38999 Series I (KJL)

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 environmentally sealed KJL series features quick-mating, three-point bayonet coupling and operates across a wide temperature range.



D38999 Series II (KJ)

ITT Cannon KJ series MIL-DTL-38999 series II are a weight-reduced and low profile circular connector ideally suited for avionic applications where space and weight are prime considerations. It offers high-density contact arrangements in a light-weight miniature circular connector. ITT Cannon KJ series connectors feature a quick-mating, three-point bayonet coupling, are environmentally-sealed and operate across a wide temperature range. ITT Cannon KJ series mil spec connectors were originally designed for military vehicles and are now industry standard aerospace and military connectors.



MIL-DTL-38999 Series III (KJB)

The de-facto standard circular connector for use in harsh military and aerospace environments, ITT Cannon KJB series MIL-DTL-38999 series III Connectors offer high-density contact arrangements in a light-weight miniature circular connector. ITT Cannon KJB series connectors have quick-mating, triple-lead threaded, self-locking coupling, are environmentally-sealed and operate across a wide temperature range. ITT Cannon KJB series connectors were originally designed for military vehicles and are now industry standard aerospace and military connectors.



MIL-DTL-38999 Series III Composite (KJB)

A lightweight standard circular connector for use in military and aerospace environments with significant weight savings over aluminium-bodied D 38999. High density layouts with up to 128 data connections and power contacts rated up to 23A. Features a triple-start coupling with anti-decoupling ratchet for high vibration applications, Cadmium and Electroless Nickel platings, 100 percent scoop-proof contacts and rated to 1500 mating cycles. Qualified to stringent MIL-DTL-38999 Series III Composite specifications.

Table of Contents

Specifications and Test Data 3-5
MIL-DTL-38999 Series I 6-9
MIL-DTL-38999 Series II 10-15
MIL-DTL-38999 Series III 16-18
MIL-DTL-38999 Series III Composite 19-20
Polarizing Positions 21
Contact Arrangements 22-23
Contacts 24-27
Torque Values / Wire Dimensions 28
Backshells 29-31
Tools 32
Assembly Instructions 33
MIL-DTL-38999 Specifications 34
Product Safety and Warranty 35
About ITT Cannon 36

In addition to our MIL-DTL-38999 series, we also offer these connectivity solutions:



Combo D-Sub Product offering includes ability to integrate signal and coax, high power, and high voltage.

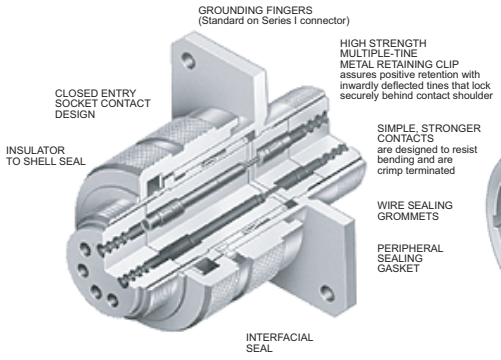


CA-Bayonet – Signal and power connectors with exceptional sealing against the ingress of fluids and will withstand the effects of high vibrations.

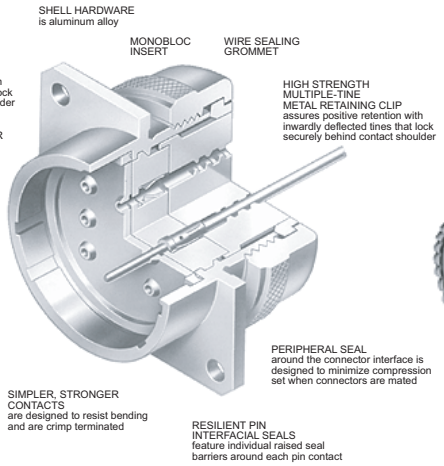


Microminiature – High performance and reliability with exceptional versatility. Available in rectangular, circular and strip configurations, many of our connectors meet or exceed the applicable requirements of the MIL-DTL-83513 specification.

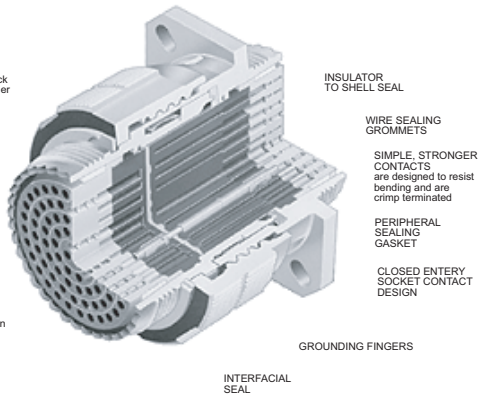
SERIES I



SERIES II



SERIES III



- Corrosion and zinc resistant shells of aluminum alloy with cadmium and zinc over nickel plating withstand a 500 hour salt spray exposure
- Rear release crimp snap-in contacts
- High contact density
- Standard MIL-C-39029 contacts, MIL-I-81969 application tools and MIL-STD 1560 insert arrangements

- Special/custom capabilities
- 100% scoop-proof - Series I and III
- Light weight /Low Profile - Series II
- Operates under severe high temperature vibration testing through 200 C - engineered for high density circuitry - Series III

- Interfacial seal helps prevent electrolytic erosion of contacts - Series III
- Superior EMI shielding provides outstanding protection up to 65dB at 10 GHZ. - Series III

Specification Comparison

Design Criteria	Series I	Series II	Series III (Aluminum)	Series III (Composite)
Low Profile/Light Weight	no	yes	no	yes
Scoop Proof	yes	no	yes	yes
Coupling System	Bayonet	Bayonet	Triple Start Thread	Triple Start Thread
Electrolytic Erosion	no	no	yes	yes
Durability (Cycles)	500	250	500	1500
High Impact Shock	yes	no	yes	yes
External Bending Moment				
Shell Size 25	650 in/lbs	150 in/lbs	1000 in/lbs	1000 in/lbs
Random Vibration "J"	49.5G, Ambient	43.7G, Ambient	49.5G, Ambient	49.5G, Ambient
Sine Vibration	60G		60G	60G
Sand, Dust, Ice	yes		yes	yes
Shell Size	9-25	8-24	9-25	9-25

Contact Rating

Contact Size	Test Current DC Test Amperage	Maximum Millivolt Drop*	Crimp Well Data: Well Diameter	Crimp Well Data: Well Depth
22D	5	40	.0345 ± .0010	.157/.141
22M**	3	30	.0280 ± .0010	.157/.141
22**	5	40	.0365 ± .0010	.157/.141
20	7.5	35	.0470 ± .0010	.229/.209
16	13	25	.0670 ± .0010	.229/.209
12	23	25	.1000 ± .0020	.229/.209

* Maximum millivolt drop data is determined by measuring resistance of mated contacts from end to en
** For reference only

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Performance and Material Specifications

MATERIALS AND FINISHES

	Aluminum		Composite	
	Receptacle	Grounded Plug	Receptacle	Grounded Plug
Shell	Aluminum alloy	Aluminum alloy*	Thermoplastic	Thermoplastic
Insulator	High grade plastic	High grade plastic	High grade plastic	High grade plastic
Contacts	Copper alloy, gold plate	Copper alloy, gold plate	Copper alloy, gold plate	Copper alloy, gold plate
Grommet and Seal	Silicone base elastomer	Silicone base elastomer	Silicone base elastomer	Silicone base elastomer
Jam Nut	Aluminum alloy	-	-	-
Grounding Spring	-	Beryllium copper	-	Beryllium copper

*Finish as noted in How To Order sections.

ELECTRICAL DATA

Contact Size: 22D, 22M*, 22*, 20, 16 and 12

Contact Rating and Wire Size Accomodation

Wire Size	Contact Size and Test Amps					
	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

*For reference only

Service Rating

Altitude	Service Rating M		Service Rating N		Service Rating I		Service Rating II	
	Mated	Unmated	Mated	Unmated	Mated	Unmated	Mated	Unmated
Sea Level	1300	1300	1000	1000	1800	1800	2300	2300
50,000 ft.	800	550	600	400	1000	600	1000	800
70,000 ft.	800	350	600	260	1000	400	1000	500
100,000 ft.	800	200	600	200	1000	200	1000	200

Test voltage, AC (rms), work voltage to be determined by application

Test Data

Test Description	Parameters
Durability	500 cycles of mating and unmating, 250 cycles for Series II with spring fingers
Temperature Range	Class F, N; - 65ºC (-85ºF) to + 200ºC (+392ºF) Class A; - 65ºC (-85ºF) to + 150ºC (+302ºF) Class B,W: - 65ºC (-85ºF) to + 175ºC (+347ºF)
Vibration	Mated connectors are vibrated with weights to simulate rear accessory loads to the following levels: Sine Vibration: Up to 60 G's - Series I & III (at rated temperature - Series III) Not applicable for Series II. Random Vibration: 43.7 Grms at rated temperature - Series III 49.5 Grms at Ambient Temperature - Series I & III 43.7 Grms at Ambient Temperature - Series II
EMI Shielding Effectiveness	Class F: EMI leakage attenuation, greater than 90dB at 100Mhz, greater than 65dB at 10 GHz. Shell to shell conductivity, 1.0 millivolt max. resistance. Class W: EMI leakage attenuation, greater than 90dB at 100 MHz, greater than 50dB at 10 GHz. Shell to shell conductivity, 2.5 millivolt max.
Corrosion Resistant	Class B, W, and Z will withstand 500 hours salt spray. Class A, F, N, will withstand 48 hours salt spray.
Fluid Immersion	Connectors are fluid resistant to many fuels, solvents, coolants and oils.
High Impact Shock	Mated conectors terminated with MIL-C-915 cable and environmentally sealed backshells will withstand high impact shock per MIL-S-901. Applicable to Series I & III only.
Altitude	Designed to operate between sea level and 100,000 ft. above sea level.
Other Environments	Mated connectors shall withstand sand and dust per method 110 of MIL-STD-202 and be ice resistant. Applicable to Series I & III only.

NOTE: For hermetic standard or test data please consult ITT.

Insert Availability and Identification

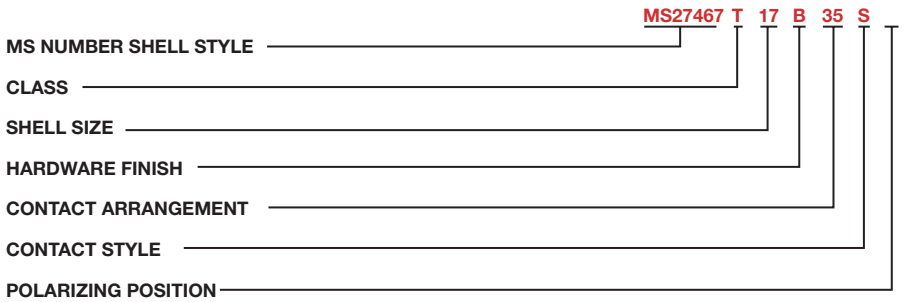
Series II	Series I & III	Service Rating	Total Contacts	Contact Size				
				22D	20	16	12	8
8-35	9-35	M	6	6				
8-98	9-98	I	3		3			
	11-4	I	4		4			
10-5	11-5	I	5		5			
10-35	11-35	M	13	13				
10-98	11-98	I	6		6			
10-99	11-99	I	7		7			
12-3		II	3			3		
12-4	13-4	I	4			4		
12-8	13-8	I	8		8			
12-35	13-35	M	22	22				
12-98	13-98	I	10		10			
14-5	15-5	II	5			5		
14-15	15-15	I	15		14	1		
14-18	15-18	I	18		18			
	15-19	I	19		19			
14-35	15-35	M	37	37				
14-97	15-97	I	12		8	4		
16-6	17-6	I	6				6	
16-8	17-8	II	8			8		
16-26	17-26	I	26		26			
16-35	17-35	M	55	55				
16-99	17-99	I	23		21	2		
18-11	19-11	II	11			11		
18-28	19-28	I	28		26	2		
18-30	19-30	I	30		29	1		
18-32	19-32	I	32		32			
18-35	19-35	M	66	66				
	21-11	I	11				11	
20-16	21-16	II	16			16		
20-35	21-35	M	79	79				
20-39	21-39	I	39		37	2		
20-41	21-41	I	41		41			
	21-75	M	4					4***
22-21	23-21	II	21			21		
22-32	23-32	I	32		32			
22-35	23-35	M	100	100				
22-53	23-53	I	53		53			
22-55	23-55	I	55		55			
24-4	25-4	I	56		48	8		
	25-19	I	19				19	
24-24	25-24	I	24			12	12	
24-29	25-29	I	29			29		
24-35	25-35	M	128	128				
	25-37	I	37			37		
	25-43	I	43		23	20		
	25-46	I, Twinax	46		40	4		2***
	25-8	Twinax	8					8***
	25-20	N, Coax, Twinax	30		10	13	4**	3***
	25-42	I, Coax	42		38			4*
24-61	25-61	I	61		61			
	25-64	I	64	40	8	10	6	
	25-66	I	66	53	2	11		

* Coax for RG-180 cables
** Coax for RG-174, -179, or -316 cables
*** Twinax for M17/176-00002 cables
(check factory for other cable applications)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

How To Order

Military Nomenclature



MS NUMBER SHELL STYLE
- MS27466 - Wall Mounting Receptacle
- MS27468 - Jam Nut Receptacle
- MS27467 - Grounded Plug
- MS27656 - Wall Mounting Receptacle (back panel mounting)
- MS27505 - Box Mounting Receptacle (back panel) (Class E)

CLASS
- E - Inactive for new design. Superseded by Class T.
- G - Environmental resistant Space Grade
- P - Environment - resistant with straight potting cup accessories
- T - Environment - resistant with accessory threads and teeth, except MS27505 (without rear accessory) (Class T not applicable to MS27505)

SHELL SIZE
9, 11, 13, 15, 17, 19, 21, 23, and 25

HARDWARE FINISH STANDARD
- A - Bright cadmium over electroless nickel plate, -85ºF to +302ºF (-65ºC to +150ºC)
- B - Olive drab cadmium over electroless nickel plate, -85ºF to +347ºF (-65ºC to +175ºC)
- F - Electroless nickel, -85ºF to +392ºF (-65ºC to +200ºC)

CONTACT ARRANGEMENT
See pages 22 and 23.

CONTACT STYLE
- P - Pin
- S - Socket
- *A - Less Pin Contact
- *B - Less Socket Contact

*Used only when other than power contacts are to be installed (i.e. shielded, thermocouple, etc.)

POLARIZING POSITION
A,B,C, and D. (No letters required for normal). See page 21.

Note: To order MS connectors less standard power contacts, purchase order must state "Less Contacts"

Cannon Nomenclature



SERIES PREFIX
KJL - Series I-Scoop proof

SHELL STYLE
- 0 - Wall mounting receptacle
- 3 - Wall mounting receptacle (back panel mounting)
- 4 - Thru bulkhead receptacle*
- 5 - Box mounting receptacle (back panel mounting)
- 6 - Straight plug, grounded
- 7 - Jam nut receptacle

CLASS
- E - Inactive for new design. Superseded by Class T.
- G - Environmental resistant - Space Grade
- F - Environment - resistant with strain relief accessory
- P - Environment - resistant with straight potting cup accessory
- T - Environment - resistant (without rear accessory) (Class T not applicable to KJL5)

*Consult factory for availability

SHELL SIZE
9,11,13,15,17,19,21,23 and 25

HARDWARE FINISH STANDARD
- A - Bright cadmium over electroless nickel plate, -85ºF to +302ºF (-65ºC to +150ºC)
- B - Olive drab cadmium over electroless nickel plate, -85ºF to +347ºF (-65ºC to + 175ºC)
- N - Electroless nickel, -85ºF to +392ºF (-65ºC to +200ºC)
- Z - Zinc Nickel, Black
- - - (Dash) When using a finish modification code

CONTACT ARRANGEMENT
See pages 22 and 23.

CONTACT STYLE
- P - Pin
- S - Socket
- PS - Pin-Socket (Shell style 4 only)

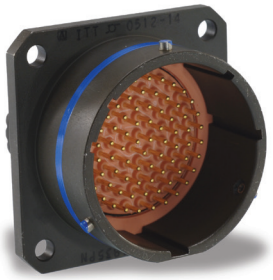
POLARIZING POSITION
N (normal), A, B, C, D. See page 21.

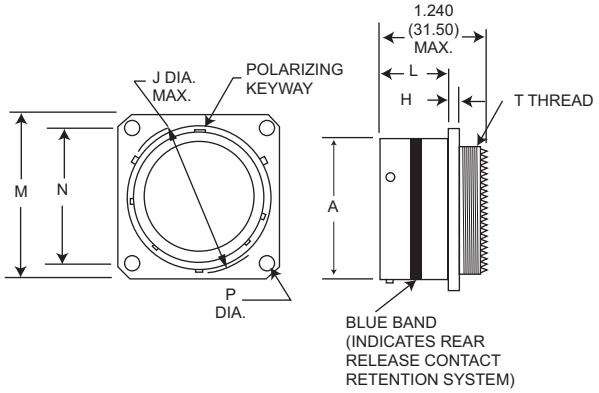
MODIFICATION CODE
- L - Less contacts, not stamped on connector
- 16 - Outgassed NASA space graded connector
- 17 - Clinch Nuts installed 4-40 Size 9-21, 6-32 Size 23-25)
- 27 - Outgassed, standard connector
- A296 - Black Zinc Cobalt, RoHS Compliant

Wall Mounting Receptacle

MS27466
(MS service class E, P, T)

KJL0





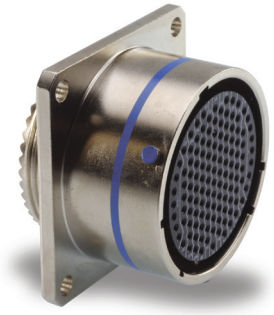
NOTE: For backshell dimensions and configurations, see pages 29 and 31.

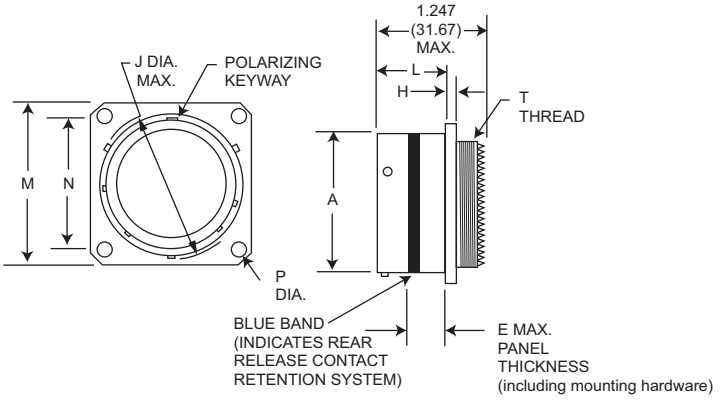
Shell Size	A Dia. Max.	H Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P Dia. Max.	T Thread	Overall Length With Backshells F Cable Clamp	Overall Length With Backshells P Potting Max.
9	.573 (14.55)	.100 (2.54)	.662 (16.81)	.632 (16.05)	.958 (24.33)	.719 (18.26)	.138 (3.51)	7/16-28UNEF-2A	1.846 (46.89)	1.451 (36.86)
11	.701 (17.81)	.100 (2.54)	.810 (20.57)	.632 (16.05)	1.051 (26.70)	.812 (20.62)	138 (3.51)	9/16-24UNEF-2A	1.846 (46.89)	1.451 (36.86)
13	.851 (21.62)	.100 (2.54)	.960 (24.38)	.632 (16.05)	1.145 (29.08)	.906 (23.01)	.138 (3.51)	11/16-24UNEF-2A	1.846 (46.89)	1.451 (36.86)
15	.976 (24.79)	.100 (2.54)	1.085 (27.56)	.632 (16.05)	1.239 (31.47)	.969 (24.61)	.138 (3.51)	13/16-20UNEF-2A	1.846 (46.89)	1.451 (36.86)
17	1.101 (27.97)	.100 (2.54)	1.210 (30.73)	.632 (16.05)	1.332 (33.83)	1.062 (26.97)	.138 (3.51)	15/16-20UNEF-2A	1.966 (49.94)	1.451 (36.86)
19	1.208 (30.68)	.100 (2.54)	1.317 (33.45)	.632 (16.05)	1.458 (37.03)	1.156 (29.36)	.138 (3.51)	1-1/16-18UNEF-2A	1.966 (50.70)	1.451 (36.86)
21	1.333 (33.86)	.130 (3.30)	1.442 (36.63)	.602 (15.29)	1.582 (40.18)	1.250 (31.75)	.138 (3.51)	1-3/16-18UNEF-2A	1.966 (50.70)	1.451 (36.86)
23	1.458 (37.03)	.130 (3.30)	1.567 (39.80)	.602 (15.29)	1.708 (43.38)	1.375 (34.93)	.157 (3.99)	1-5/16-18UNEF-2A	1.966 (50.70)	1.451 (36.86)
25	1.583 (40.21)	.130 (3.30)	1.692 (42.98)	.602 (15.29)	1.832 (46.53)	1.500 (38.10)	.157 (3.99)	1-7/16-18UNEF-2A	1.966 (50.70)	1.451 (36.86)

Wall Mounting Receptacle (Back Panel)

MS27656
(MS service class E, P, T)

KJL3





NOTE: For backshell dimensions and configurations, see pages 29 and 31.

Shell Size	A Dia. Max.	E Max.	H Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P Dia. Max.	T Thread	Overall Length With Backshells F Cable Clamp	Overall Length With Backshells P Potting Max.
9	.573 (14.55)	.234 (5.94)	.100 (2.54)	.662 (16.81)	.820 (20.83)	.958 (24.33)	.719 (18.26)	.138 (3.51)	7/16-28UNEF-2A	1.805 (45.85)	1.410 (35.81)
11	.701 (17.81)	.234 (5.94)	.100 (2.54)	.810 (20.57)	.820 (20.83)	1.051 (26.70)	.812 (20.62)	138 (3.51)	9/16-24UNEF-2A	1.805 (45.85)	1.410 (35.81)
13	.851 (21.62)	.234 (5.94)	.100 (2.54)	.960 (24.38)	.820 (20.83)	1.145 (29.08)	.906 (23.01)	.138 (3.51)	11/16-24UNEF-2A	1.805 (45.85)	1.410 (35.81)
15	.976 (24.79)	.234 (5.94)	.100 (2.54)	1.085 (27.56)	.820 (20.83)	1.239 (31.47)	.969 (24.61)	.138 (3.51)	13/16-20UNEF-2A	1.805 (45.85)	1.410 (35.81)
17	1.101 (27.97)	.234 (5.94)	.100 (2.54)	1.210 (30.73)	.820 (20.83)	1.332 (33.83)	1.062 (26.97)	.138 (3.51)	15/16-20UNEF-2A	1.935 (48.90)	1.410 (35.81)
19	1.208 (30.68)	.234 (5.94)	.100 (2.54)	1.317 (33.45)	.820 (20.83)	1.458 (37.03)	1.156 (29.36)	.138 (3.51)	1-1/16-18UNEF-2A	1.955 (49.66)	1.410 (35.81)
21	1.333 (33.86)	.204 (5.18)	.130 (3.30)	1.442 (36.63)	.790 (20.07)	1.582 (40.18)	1.250 (31.75)	.138 (3.51)	1-3/16-18UNEF-2A	1.955 (49.66)	1.410 (35.81)
23	1.458 (37.03)	.204 (5.18)	.130 (3.30)	1.567 (39.80)	.790 (20.07)	1.708 (43.38)	1.375 (34.93)	.157 (3.99)	1-5/16-18UNEF-2A	1.955 (49.66)	1.410 (35.81)
25	1.583 (40.21)	.193 (4.90)	.130 (3.30)	1.692 (42.98)	.790 (20.07)	1.832 (46.53)	1.500 (38.10)	.157 (3.99)	1-7/16-18UNEF-2A	1.955 (49.66)	1.410 (35.81)

Performance Specifications-Pages 3 and 4. Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32. Contact Arrangements - Pages 22 and 23.

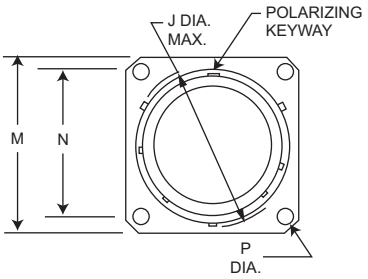
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

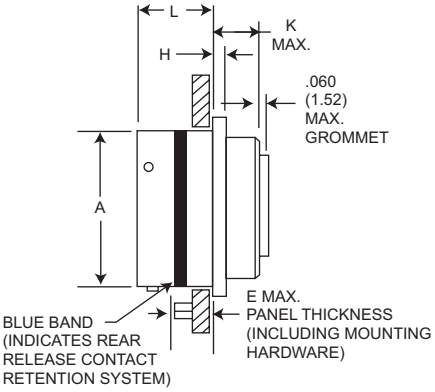
Box Mounting Receptacle (Back Panel)

MS27505E
(MS service class E)

KJL5E







NOTE: This connector does not accommodate backshells.

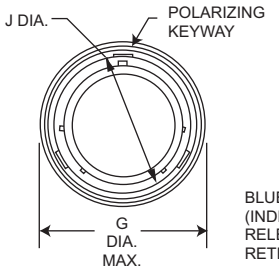
Shell Size	A Dia. Max.	E Max.	H Max.	J Dia. Max.	K Max.	L Max.	M Max.	N T.P.	P Dia. Max.
9	.573 (14.55)	.234 (5.94)	.100 (2.54)	.662 (16.81)	.219 (5.56)	.820 (20.83)	.958 (24.33)	.719 (18.26)	.138 (3.51)
11	.701 (17.81)	.234 (5.94)	.100 (2.54)	.810 (20.57)	.219 (5.56)	.820 (20.83)	1.051 (26.70)	.812 (20.62)	138 (3.51)
13	.851 (21.62)	.234 (5.94)	.100 (2.54)	.960 (24.38)	.219 (5.56)	.820 (20.83)	1.145 (29.08)	.906 (23.01)	.138 (3.51)
15	.976 (24.79)	.234 (5.94)	.100 (2.54)	1.085 (27.56)	.219 (5.56)	.820 (20.83)	1.239 (31.47)	.969 (24.61)	.138 (3.51)
17	1.101 (27.97)	.234 (5.94)	.100 (2.54)	1.210 (30.73)	.219 (5.56)	.820 (20.83)	1.332 (33.83)	1.062 (26.97)	.138 (3.51)
19	1.208 (30.68)	.234 (5.94)	.100 (2.54)	1.317 (33.45)	.219 (5.56)	.820 (20.83)	1.458 (37.03)	1.156 (29.36)	.138 (3.51)
21	1.333 (33.86)	.204 (5.18)	.130 (3.30)	1.442 (36.63)	.250 (6.35)	.790 (20.07)	1.582 (40.18)	1.250 (31.75)	.138 (3.51)
23	1.458 (37.03)	.204 (5.18)	.130 (3.30)	1.567 (39.80)	.250 (6.35)	.790 (20.07)	1.708 (43.38)	1.375 (34.93)	.157 (3.99)
25	1.583 (40.21)	.193 (4.90)	.130 (3.30)	1.692 (42.98)	.250 (6.35)	.790 (20.07)	1.832 (46.53)	1.500 (38.10)	.157 (3.99)

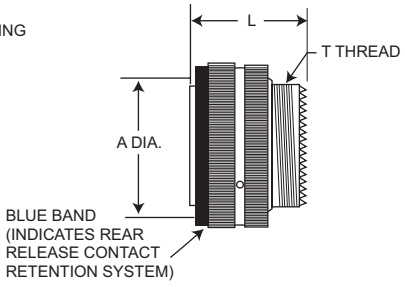
Straight Plug Grounded

MS27467
(MS service class E, P, T)

KJL6







NOTE: For backshell dimensions and configurations, see pages 29 and 31.

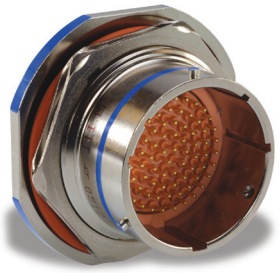
Shell Size	A Max.	G Dia. Max.	J Dia. Max.	(Class T) L Max.	T Thread	Overall Length With Backshells F Cable Clamp	P Potting Max.
9	.585 (14.86)	.859 (21.82)	.483 (12.27)	1.234 (31.34)	7/16-28UNEF-2A	1.793 (45.54)	1.671 (42.44)
11	.717 (18.21)	.984 (24.99)	.611 (15.52)	1.234 (31.34)	9/16-24UNEF-2A	1.793 (45.54)	1.671 (42.44)
13	.866 (22.00)	1.156 (29.36)	.760 (19.30)	1.234 (31.34)	11/16-24UNEF-2A	1.793 (45.54)	1.671 (42.44)
15	.990 (25.15)	1.281 (32.54)	.885 (22.48)	1.234 (31.34)	13/16-20UNEF-2A	1.793 (45.54)	1.671 (42.44)
17	1.115 (28.32)	1.406 (35.71)	1.010 (25.65)	1.234 (31.34)	15/16-20UNEF-2A	1.913 (48.59)	1.671 (42.44)
19	1.222 (31.04)	1.516 (38.51)	1.115 (28.32)	1.234 (31.34)	1-1/16-18UNEF-2A	1.943 (49.35)	1.671 (42.44)
21	1.347 (34.21)	1.641 (41.68)	1.240 (31.50)	1.234 (31.34)	1-3/16-18UNEF-2A	1.943 (49.35)	1.766 (44.86)
23	1.472 (37.39)	1.766 (44.86)	1.365 (34.67)	1.234 (31.34)	1-5/16-18UNEF-2A	1.943 (49.35)	1.766 (44.86)
25	1.597 (40.56)	1.891 (48.03)	1.490 (37.85)	1.234 (31.34)	1-7/16-18UNEF-2A	1.943 (49.35)	1.766 (44.86)

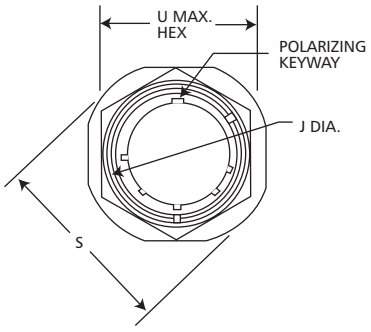
Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31 and 32.
Contact Arrangements - Pages 22 and 23.

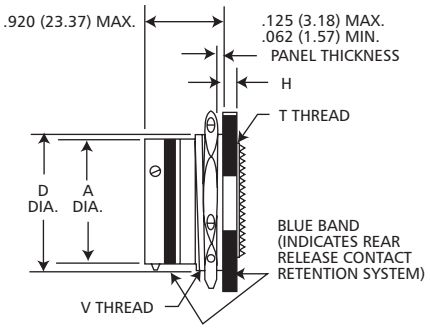
Jam Nut Receptacle

MS27468
(MS service class E,P,T)

KJL7







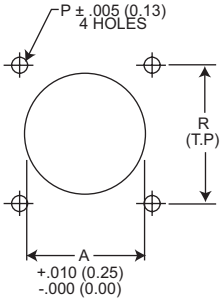
NOTE: For backshell dimensions and configurations, see pages 29 and 31.

									Overall Length With Backshells	
Shell Size	A Dia. Max.	D Max.	H Max.	J Dia. Max.	S Dia. Max.	T Thread	U Max. Hex.	V Thread Class 2A	F Cable Clamp	P Potting Max.
9	.573 (14.55)	.655 (16.64)	.120 (3.05)	.662 (16.81)	1.204 (30.58)	7/16-28UNEF-2A	.892 (22.66)	11/16-24UNEF	1.846 (46.89)	1.451 (36.86)
11	.701 (17.81)	.755 (19.18)	.120 (3.05)	.810 (20.57)	1.391 (35.33)	9/16-24UNEF-2A	1.017 (25.83)	13/16-24UNEF	1.846 (46.89)	1.451 (36.86)
13	.851 (21.62)	.942 (23.93)	.120 (3.05)	.960 (24.38)	1.516 (35.51)	11/16-24UNEF-2A	1.205 (30.61)	1-20UNEF	1.846 (46.89)	1.451 (36.86)
15	.976 (24.79)	1.066 (27.08)	.120 (3.05)	1.085 (27.56)	1.641 (41.68)	13/16-20UNEF-2A	1.329 (33.76)	1-1/8-18UNEF	1.846 (46.89)	1.451 (36.86)
17	1.101 (27.97)	1.191 (30.25)	.120 (3.05)	1.210 (30.73)	1.766 (44.86)	15/16-20UNEF-2A	1.455 (36.96)	1-1/4-18UNEF	1.966 (49.94)	1.451 (36.86)
19	1.208 (30.68)	1.316 (33.43)	.151 (3.84)	1.317 (33.45)	1.954 (49.63)	1-1/16-18UNEF-2A	1.579 (40.11)	1-3/8-18UNEF	1.996 (50.70)	1.451 (36.86)
21	1.333 (33.86)	1.441 (36.60)	.151 (3.84)	1.442 (36.63)	2.078 (52.78)	1-3/16-18UNEF-2A	1.705 (43.31)	1-1/2-18UNEF	1.996 (50.70)	1.451 (36.86)
23	1.458 (37.03)	1.566 (39.78)	.151 (3.84)	1.567 (39.80)	2.204 (55.98)	1-5/16-18UNEF-2A	1.829 (46.46)	1-5/8-18UNEF	1.996 (50.70)	1.451 (36.86)
25	1.583 (40.21)	1.691 (42.95)	.151 (3.84)	1.692 (42.98)	2.328 (59.13)	1-7/16-18UNEF-2A	20.17 (51.23)	1-3/4-18UNS	1.996 (50.70)	1.451 (36.86)

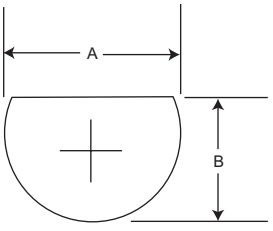
Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22, 23.

Panel Cutouts

Flange Mounted Receptacles



Jam Nut Receptacles

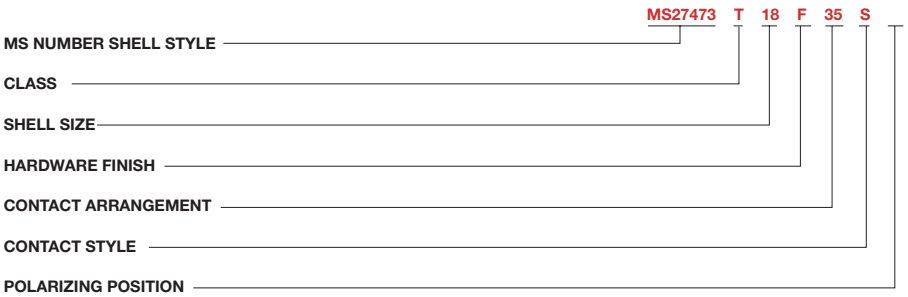


Shell Size	A Dia.	P Dia.	(Class T) R	Mtg. Screw	Shell Size	A +.010 (.25) -.000 (.00)	B +.000 (.00) -.010 (.25)
9	.665 (16.89)	.128 (3.25)	.719 (18.26)	#4	9	.700 (17.78)	.670 (17.02)
11	.812 (20.62)	.128 (3.25)	.812 (20.62)	#4	11	.825 (20.96)	.771 (19.58)
13	.965 (24.51)	.128 (3.25)	.906 (23.01)	#4	13	1.010 (25.65)	.955 (24.26)
15	1.085 (27.55)	.128 (3.25)	.969 (24.61)	#4	15	1.135 (28.83)	1.085 (27.56)
17	1.250 (31.75)	.128 (3.25)	1.062 (26.97)	#4	17	1.260 (32.00)	1.210 (30.73)
19	1.322 (33.57)	.128 (3.25)	1.156 (29.36)	#4	19	1.385 (35.18)	1.335 (33.91)
21	1.447 (36.75)	.128 (3.25)	1.250 (31.75)	#4	21	1.510 (38.35)	1.460 (37.08)
23	1.569 (39.85)	.154 (3.91)	1.375 (34.93)	#6	23	1.635 (41.53)	1.585 (40.26)
25	1.703 (43.25)	.150 (3.81)	1.500 (38.10)	#6	25	1.760 (44.70)	1.710 (43.43)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

How To Order

Military Nomenclature



MS NUMBER SHELL STYLE
- MS27472 - Wall Mounting Receptacle
- MS27473 - Straight Plug
- MS27474 - Jam Nut Receptacle
- MS27484 - Grounded Plug
- MS27497 - Wall Mounting Receptacle (back panel mounting)
- MS27513 - Box Mounting Receptacle
- MS27499 - Box Mounting Receptacle (Class E)
- MS27508 - Box Mounting (back panel mounting) (Class E)

CLASS
- E - Environment - resistant with rear accessory (without strain relief)
- G - Environmental - resistant wall mount and jam nut receptacle and plug types. Space Grade.
- P - Enironment - resistant with straight potting cup accessories
- T - Environment - resistant (without rear accessory). (Class T not applicable to MS27499, MS27513, and MS27508.)

SHELL SIZE
8, 10, 12, 14, 16, 18, 20, 22, 24.

HARDWARE FINISH STANDARD
- A - Bright cadmium over electroless nickel plate, - 85ºF to + 302ºF (- 65ºC to + 150ºC)
- B - Olive drab cadmium over electoless nickel plate, - 85ºF to + 347ºF (- 65ºC to + 175ºC)
- F - Electroless nickel, - 85ºF to + 392ºF (-65ºC to + 200ºC)

CONTACT ARRANGEMENT
See pages 22 and 23.

CONTACT STYLE
- P - Pin
- S - Socket
- *A - Less Pin Contact
- *B - Less Socket Contact

*Used only when other than power contacts are to be installed (i.e. shielded, thermocouple, etc.)

POLARIZING POSITION
A, B, C, and D (no letter required for normal).
See page 21.

Note: To order MS connectors less standard power contacts, purchase order must state "Less Contacts".

ITT Nomenclature



Note KJ supplied with exact complement of contacts.

SERIES PREFIX
- KJ - Series II - Low Profile

SHELL STYLE
- 0 - Wall mounting receptacle
- 2 - Box mounting receptacle
- 3 - Wall mounting receptacle (back panel mounting)
- 5 - Box mounting receptacle (back panel mounting)
- 6 - Straight plug
- G6 - Straight plug, grounded
- 7 - Jam nut receptacle

CLASS
- E - Environment - resistant with rear accessory (without strain relief)
- F - Environment - resistant with strain relief acccessory
- G - Environmental - resistant wall mount and jam nut receptacle and plug type. Space Grade.
- P - Environment - resistant with straight potting cup accessory
- R - Environment - resistant with full grommet seal without rear accessory; shell styles 2 and 5 only
- T - Environment - resistant (without rear accessory). (Class T not applicable to KJ2E, KJ2R, KJ5E and KJ5R.)

SHELL SIZE
8, 10, 12, 14, 16, 18, 20, 22, and 24.

HARDWARE FINISH STANDARD
- A - Bright cadmium over electroless nickel plate, - 85ºF to + 302ºF (- 65ºC to + 150ºC)
- B - Olive drab cadmium over electroless nickel plate, - 85ºF to + 347ºF (- 65ºC to + 175˚C)
- N - Electroless nickel, - 85ºF to + 392ºF (-65ºC to + 200ºC)
- Z - Zinc Nickel, Black
- - (Dash) When using a finish modification code

CONTACT ARRANGMENT
See pages 22 and 23.

CONTACT STYLE
- P - Pin
- S - Socket

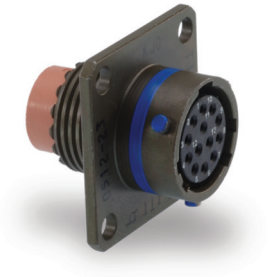
POLARIZING POSITION
N (normal), A, B, C, D, see page 21.

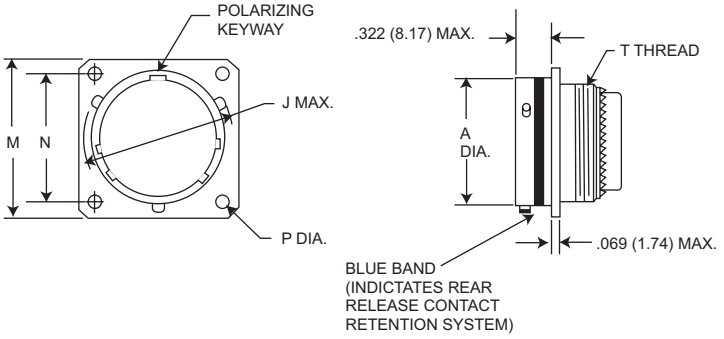
MODIFICATION CODE
- L - Less contacts, not stamped on connector
- 16 - Outgassed NASA space graded connector
- 17 - Clinch Nuts installed (4-40 Size 9-21)
- 27 - Outgassed, standard connector
- A296 - Black ZInc Cobalt, RoHS Compliant

Wall Mounting Receptacle

MS27472
(MS service class E, P, T)

KJ0





NOTE: For backshell dimensions and configurations, see pages 29 and 31.

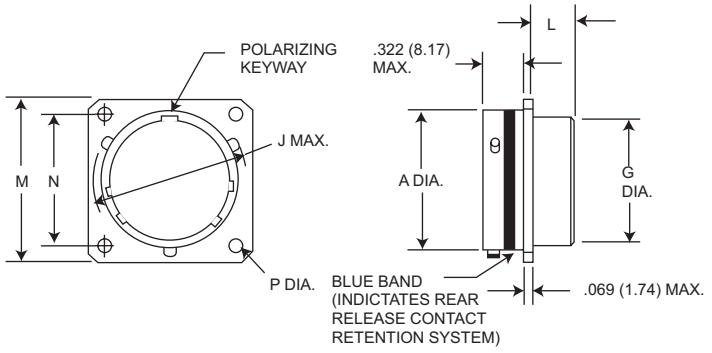
Shell Size	A Dia. Max.	J Dia. Max.	M Max.	N T.P	P +.005 (0.13) -.010 (0.25)	T Thread	Overall length With Backshells E Straight	F Cable Clamp	P Potting Max.
8	.474 (12.04)	.563 (14.30)	.828 (21.03)	.594 (15.09)	.125 (3.18)	7/16-28UNEF-2A	.850 (21.59)	1.555 (39.50)	1.020 (25.91)
10	.591 (15.01)	.680 (17.27)	.954 (24.23)	.719 (18.26)	.125 (3.18)	9/16-24UNEF-2A	.850 (21.59)	1.555 (39.50)	1.020 (25.91)
12	.751 (19.08)	.859 (21.82)	1.047 (26.59)	.812 (20.62)	.125 (3.18)	11/16-24UNEF-2A	.850 (21.59)	1.555 (39.50)	1.020 (25.91)
14	.876 (22.25)	.984 (24.99)	1.141 (28.98)	.906 (23.01)	.125 (3.18)	13/16-20UNEF-2A	.850 (21.59)	1.790 (45.47)	1.020 (25.91)
16	1.001 (25.43)	1.108 (28.14)	1.234 (31.34)	.969 (24.61)	.125 (3.18)	15/16-20UNEF-2A	.850 (21.59)	1.790 (45.47)	1.020 (25.91)
18	1.126 (28.60)	1.233 (31.32)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)	1-1/16-18UNEF-2A	.850 (21.59)	1.790 (45.47)	1.020 (25.91)
20	1.251 (31.78)	1.358 (34.49)	1.453 (36.91)	1.156 (27.36)	.125 (3.18)	1-3/16-18UNEF-2A	.850 (21.59)	1.790 (45.47)	1.020 (25.91)
22	1.376 (34.95)	1.483 (37.67)	1.578 (39.08)	1.250 (31.76)	.125 (3.18)	1-5/16-18UNEF-2A	.850 (21.59)	1.930 (49.02)	1.020 (25.91)
24	1.501 (38.13)	1.610 (40.89)	1.703 (43.26)	1.375 (34.92)	.152 (3.86)	1-7/16-18UNEF-2A	.850 (21.59)	1.900 (48.26)	1.080 (27.43)

Box Mounting Receptacle

MS27499E
(MS service class E)

KJ2E





NOTE: This connector does not accommodate backshells

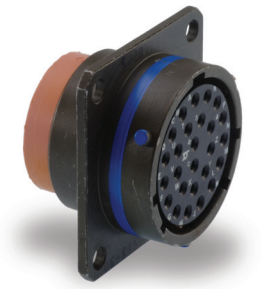
Shell Size	A Dia. Max.	G Dia. Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P +.005 (0.13) -.010 (0.25)
8	.474 (12.04)	.421 (10.69)	.563 (14.30)	.312 (7.92)	.828 (21.03)	.594 (15.09)	.125 (3.18)
10	.591 (15.01)	.542 (13.77)	.680 (17.27)	.312 (7.92)	.954 (24.23)	.719 (18.26)	.125 (3.18)
12	.751 (19.08)	.667 (16.94)	.859 (21.82)	.312 (7.92)	1.047 (26.59)	.812 (20.62)	.125 (3.18)
14	.876 (22.25)	.791 (20.09)	.984 (24.99)	.312 (7.92)	1.141 (28.98)	.906 (23.01)	.125 (3.18)
16	1.001 (25.43)	.916 (23.27)	1.108 (28.14)	.312 (7.92)	1.234 (31.34)	.969 (24.61)	.125 (3.18)
18	1.126 (28.60)	1.034 (26.26)	1.233 (31.32)	.312 (7.92)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)
20	1.251 (31.78)	1.158 (29.41)	1.358 (34.49)	.312 (7.92)	1.453 (36.81)	1.156 (27.36)	.125 (3.18)
22	1.376 (33.95)	1.283 (32.59)	1.483 (37.67)	.312 (7.92)	1.578 (40.08)	1.250 (31.75)	.125 (3.18)
24	1.501 (38.13)	1.408 (35.76)	1.610 (40.89)	.312 (7.92)	1.703 (43.26)	1.375 (34.93)	.152 (3.86)

Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22 and 23.

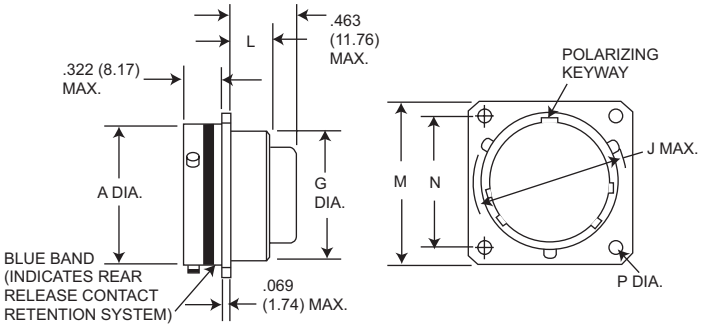
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Box Mounting Receptacle

MS27513E
(MS service class E)



KJ2R



NOTE: This connector does not accommodate backshells

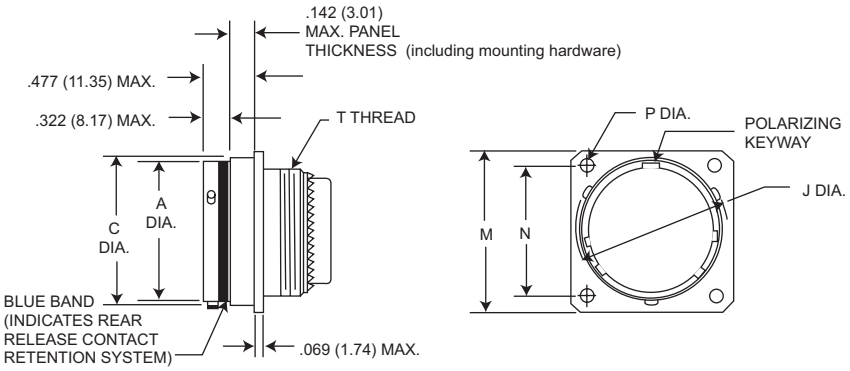
Shell Size	A Dia. Max.	G Dia. Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P +.005 (0.13) -.010 (0.25)
8	.474 (12.04)	.421 (10.69)	.563 (14.30)	.312 (7.92)	.828 (21.03)	.594 (15.09)	.125 (3.18)
10	.591 (15.01)	.542 (13.77)	.680 (17.27)	.312 (7.92)	.954 (24.23)	.719 (18.26)	.125 (3.18)
12	.751 (19.08)	.667 (16.94)	.859 (21.82)	.312 (7.92)	1.047 (26.59)	.812 (20.62)	.125 (3.18)
14	.876 (22.25)	.791 (20.09)	.984 (24.99)	.312 (7.92)	1.141 (28.98)	.906 (23.01)	.125 (3.18)
16	1.001 (25.43)	.916 (23.27)	1.108 (28.14)	.312 (7.92)	1.234 (31.34)	.969 (24.61)	.125 (3.18)
18	1.126 (28.60)	1.034 (26.26)	1.233 (31.32)	.312 (7.92)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)
20	1.251 (31.78)	1.158 (29.41)	1.358 (34.49)	.312 (7.92)	1.453 (36.81)	1.156 (27.36)	.125 (3.18)
22	1.376 (33.95)	1.283 (32.59)	1.483 (27.67)	.312 (7.92)	1.578 (40.08)	1.250 (31.75)	.125 (3.18)
24	1.501 (38.13)	1.408 (35.76)	1.610 (40.89)	.312 (7.92)	1.703 (43.26)	1.375 (34.93)	.152 (3.85)

Wall Mounting Receptacle

MS27497
(MS service class E, P, T)



KJ3



NOTE: For backshell dimensions and configurations, see pages 29 and 31.

Shell Size	A Dia. Max.	C Dia. Max.	J Dia. Max.	M Max.	N T.P	P +.005 (0.13) -.010 (0.25)	T Thread	Overall Length With Backshells E Straight	F Cable Clamp	P Potting Max.
8	.474 (12.04)	.522 (13.26)	.563 (14.30)	.828 (21.03)	.594 (15.09)	.125 (3.18)	7/16-28UNEF-2A	.855 (21.72)	1.570 (39.88)	1.020 (25.91)
10	.591 (15.01)	.639 (16.23)	.680 (17.27)	.954 (24.23)	.719 (18.26)	.125 (3.18)	9/16-24UNEF-2A	.855 (21.72)	1.570 (39.88)	1.020 (25.91)
12	.751 (19.08)	.808 (20.52)	.859 (21.82)	1.047 (26.59)	.812 (20.62)	.125 (3.18)	11/16-24UNEF-2A	.855 (21.72)	1.570 (39.88)	1.020 (25.91)
14	.876 (22.25)	.935 (23.75)	.984 (24.99)	1.141 (28.98)	.906 (23.01)	.125 (3.18)	13/16-20UNEF-2A	.855 (21.72)	1.780 (45.21)	1.020 (25.91)
16	1.001 (25.43)	1.058 (26.87)	1.108 (28.14)	1.234 (31.34)	.969 (24.61)	.125 (3.18)	15/16-20UNEF-2A	.855 (21.72)	1.780 (45.21)	1.020 (25.91)
18	1.126 (28.60)	1.183 (30.05)	1.233 (31.32)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)	1-1/16-18UNEF-2A	.855 (21.72)	1.780 (45.21)	1.020 (25.91)
20	1.251 (31.78)	1.308 (33.22)	1.358 (34.49)	1.453 (36.91)	1.156 (29.36)	.125 (3.18)	1-3/16-18UNEF-2A	.855 (21.72)	1.780 (45.21)	1.020 (25.91)
22	1.376 (34.95)	1.433 (36.40)	1.483 (37.67)	1.578 (40.08)	1.250 (31.75)	.125 (3.18)	1-5/16-18UNEF-2A	.855 (21.72)	1.960 (49.78)	1.020 (25.91)
24	1.501 (38.13)	1.568 (39.83)	1.610 (40.89)	1.703 (43.26)	1.375 (34.93)	.152 (3.86)	1-7/16-18UNEF-2A	.855 (21.72)	1.960 (49.78)	1.080 (27.43)

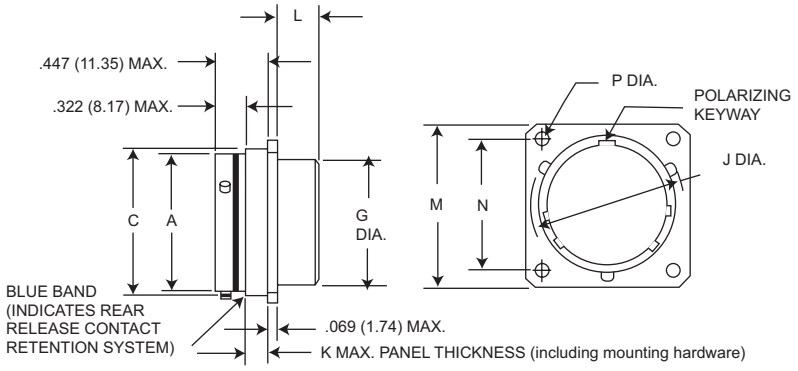
Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22 and 23.

Box Mounting Receptacle (Back Panel)

MS27508E
(MS service class E)



KJ5E

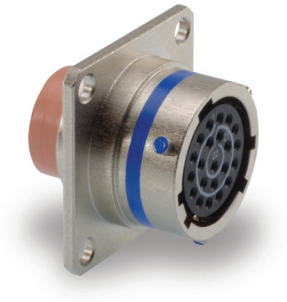


NOTE: This connector does not accommodate backshells

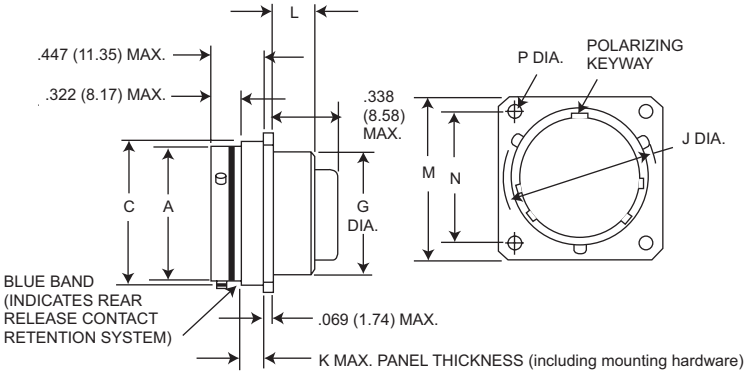
Shell Size	A Dia. Max.	C Dia. Max.	G Dia. Max.	J Dia. Max.	K Max.	L Max.	M Max.	N T.P	P +.005 (0.13) -.010 (0.25)
8	.474 (12.04)	.522 (13.26)	.421 (10.69)	.563 (14.30)	.147 (3.73)	.185 (4.70)	.828 (21.03)	.594 (15.09)	.125 (3.18)
10	.591 (15.01)	.639 (16.23)	.542 (13.77)	.680 (17.27)	.152 (3.86)	.185 (4.70)	.954 (24.23)	.719 (18.26)	.125 (3.18)
12	.751 (19.08)	.808 (20.52)	.667 (16.94)	.859 (21.82)	.152 (3.86)	.185 (4.70)	1.047 (26.59)	.812 (20.62)	.125 (3.18)
14	.876 (22.25)	.935 (23.75)	.791 (20.09)	.984 (24.99)	.152 (3.86)	.185 (4.70)	1.141 (28.98)	.906 (23.01)	.125 (3.18)
16	1.001 (25.42)	1.058 (26.87)	.916 (23.27)	1.108 (28.14)	.152 (3.86)	.185 (4.70)	1.234 (31.24)	.969 (24.61)	.125 (3.18)
18	1.126 (28.60)	1.183 (30.05)	1.034 (31.34)	1.233 (31.32)	.152 (3.86)	.185 (4.70)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)
20	1.251 (31.77)	1.308 (33.22)	1.158 (34.52)	1.358 (34.49)	.179 (4.55)	.185 (4.70)	1.453 (36.91)	1.156 (29.36)	.125 (3.18)
22	1.376 (34.95)	1.433 (36.40)	1.283 (32.59)	1.483 (37.67)	.179 (4.55)	.185 (4.70)	1.578 (40.08)	1.250 (31.75)	.125 (3.18)
24	1.501 (38.13)	1.568 (39.83)	1.408 (35.76)	1.610 (40.89)	.169 (4.29)	.185 (4.70)	1.703 (43.66)	1.375 (34.92)	.152 (3.86)

Box Mounting Receptacle (Back Panel)

No MS part number



KJ5R



NOTE: This connector does not accommodate backshells

Shell Size	A Dia. Max.	C Dia. Max.	G Dia. Max.	J Dia. Max.	K Max.	L Max.	M Max.	N T.P	P +.005 (0.13) -.010 (0.25)
8	.474 (12.04)	.522 (13.26)	.421 (10.69)	.563 (14.30)	.147 (3.73)	.185 (4.70)	.828 (21.03)	.594 (15.09)	.125 (3.18)
10	.591 (15.01)	.639 (16.23)	.542 (13.77)	.680 (17.27)	.152 (3.86)	.185 (4.70)	.954 (24.23)	.719 (18.26)	.125 (3.18)
12	.751 (19.08)	.808 (20.52)	.667 (16.94)	.859 (21.82)	.152 (3.86)	.185 (4.70)	1.047 (26.59)	.812 (20.62)	.125 (3.18)
14	.876 (22.25)	.935 (23.75)	.791 (20.09)	.984 (24.99)	.152 (3.86)	.185 (4.70)	1.141 (28.98)	.906 (23.01)	.125 (3.18)
16	1.001 (25.42)	1.058 (26.87)	.916 (23.27)	1.108 (28.14)	.152 (3.86)	.185 (4.70)	1.234 (31.24)	.969 (24.61)	.125 (3.18)
18	1.126 (28.60)	1.183 (30.05)	1.034 (31.34)	1.233 (31.32)	.152 (3.86)	.185 (4.70)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)
20	1.251 (31.77)	1.308 (33.22)	1.158 (34.52)	1.358 (34.49)	.179 (4.55)	.185 (4.70)	1.453 (36.91)	1.156 (29.36)	.125 (3.18)
22	1.376 (34.95)	1.433 (36.40)	1.283 (32.59)	1.483 (37.67)	.179 (4.55)	.185 (4.70)	1.578 (40.08)	1.250 (31.75)	.125 (3.18)
24	1.501 (38.13)	1.568 (39.83)	1.408 (35.76)	1.610 (40.89)	.169 (4.29)	.185 (4.70)	1.703 (43.66)	1.375 (34.92)	.152 (3.86)

Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22 and 23.

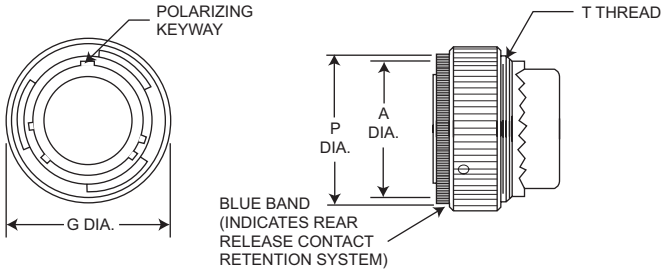
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Straight Plug

MS27473
(MS service class E, P, T)

KJ6





NOTE: For backshell dimensions and configurations, see pages 29 and 31.

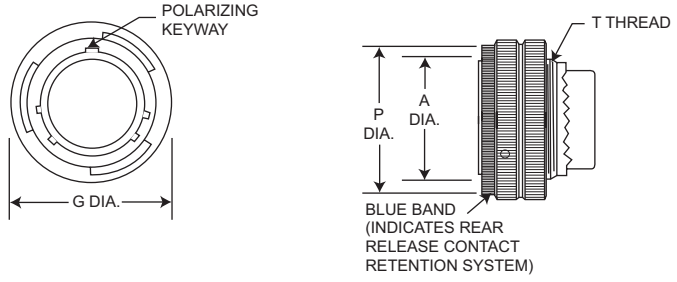
Shell Size	A Dia. Max.	G Dia. Max.	P Dia. Max.	T Thread	Overall Length With Backshells E Straight	F Cable Clamp	P Potting Max.
8	.485 (12.32)	.749 (19.02)	.630 (16.00)	7/16-28UNEF-2A	1.026 (26.06)	1.555 (39.50)	1.020 (25.91)
10	.606 (15.39)	.858 (21.79)	.752 (19.10)	9/16-24UNEF-2A	1.026 (26.06)	1.555 (39.50)	1.020 (25.91)
12	.765 (19.43)	1.030 (26.16)	.925 (23.50)	11/16-24UNEF-2A	1.026 (26.06)	1.555 (39.50)	1.020 (25.91)
14	.890 (22.61)	1.155 (29.34)	1.050 (26.67)	13/16-20UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
16	1.014 (25.76)	1.280 (32.51)	1.172 (29.77)	15/16-20UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
18	1.140 (28.96)	1.405 (35.69)	1.304 (33.12)	1-1/16-18UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
20	1.264 (32.11)	1.530 (38.86)	1.435 (36.45)	1-3/16-18UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
22	1.389 (35.28)	1.640 (40.66)	1.560 (39.62)	1-5/16-18UNEF-2A	1.026 (26.06)	1.930 (49.02)	1.020 (25.91)
24	1.514 (38.46)	1.765 (44.83)	1.688 (42.88)	1-7/16-18UNEF-2A	1.104 (28.04)	1.930 (49.02)	1.080 (27.43)

Straight Plug Grounded

MS27484
(MS service class E, P, T)

KJG6





NOTE: For backshell dimensions and configurations, see pages 29 and 31.

Shell Size	A Dia. Max.	G Dia. Max.	P Dia. Max.	T Thread	Overall Length With Backshells E Straight	F Cable Clamp	P Potting Max.
8	.485 (12.32)	.749 (19.02)	.630 (16.00)	7/16-28UNEF-2A	1.026 (26.06)	1.555 (39.50)	1.020 (25.91)
10	.606 (15.39)	.858 (21.79)	.752 (19.10)	9/16-24UNEF-2A	1.026 (26.06)	1.555 (39.50)	1.020 (25.91)
12	.765 (19.43)	1.030 (26.16)	.925 (23.50)	11/16-24UNEF-2A	1.026 (26.06)	1.555 (39.50)	1.020 (25.91)
14	.890 (22.61)	1.155 (29.34)	1.050 (26.67)	13/16-20UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
16	1.014 (25.76)	1.280 (32.51)	1.172 (29.77)	15/16-20UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
18	1.140 (28.96)	1.405 (35.69)	1.304 (33.12)	1-1/16-18UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
20	1.264 (32.11)	1.530 (38.86)	1.435 (36.45)	1-3/16-18UNEF-2A	1.026 (26.06)	1.790 (45.47)	1.020 (25.91)
22	1.389 (35.28)	1.640 (40.66)	1.560 (39.62)	1-5/16-18UNEF-2A	1.026 (26.06)	1.930 (49.02)	1.020 (25.91)
24	1.514 (38.46)	1.765 (44.83)	1.688 (42.88)	1-7/16-18UNEF-2A	1.104 (28.04)	1.930 (49.02)	1.080 (27.43)

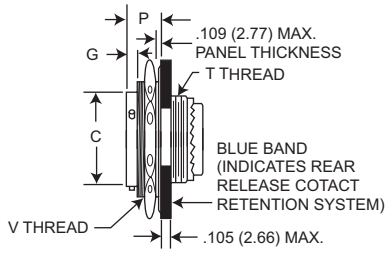
Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22 and 23.

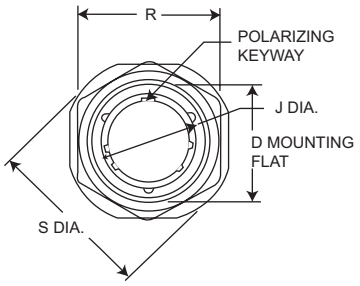
Jam Nut Receptacle

MS27474
(MS service class E, P, T)

KJ7







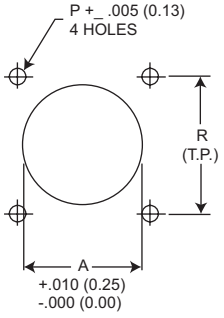
NOTE: For backshell dimensions and configurations, see pages 29 and 31.

Shell Size	C Dia. Max.	D Max.	G Max.	J Max.	P Max.	R Max. Hex.	S Dia. Max.	T Thread	V Thread	Overall length With Backshells E Straight	F Cable Clamp	P Potting Max.
8	.474 (12.04)	.818 (20.78)	.145 (3.68)	.563 (14.30)	.443 (11.25)	1.079 (27.41)	1.381 (35.08)	7/16-28UNEF-2A	7/8-20UNEF-2A	.840 (21.34)	1.555 (39.50)	1.020 (25.91)
10	.591 (15.01)	.942 (23.93)	.145 (3.68)	.680 (17.27)	.443 (11.25)	1.205 (30.61)	1.506 (38.25)	9/16-24UNEF-2A	1-20UNEF-2A	.840 (21.34)	1.555 (39.50)	1.020 (25.91)
12	.751 (19.08)	1.066 (27.08)	.145 (3.68)	.859 (21.82)	.443 (11.25)	1.329 (33.76)	1.631 (41.43)	11/16-24UNEF-2A	1-1/8-18UNEF-2A	.840 (21.34)	1.555 (39.50)	1.020 (25.91)
14	.876 (22.25)	1.191 (30.25)	.145 (3.68)	.984 (24.99)	.443 (11.25)	1.455 (36.96)	1.756 (44.60)	13/16-20UNEF-2A	1-1/4-18UNEF-2A	.840 (21.34)	1.790 (45.47)	1.020 (25.91)
16	1.001 (25.43)	1.321 (33.55)	.145 (3.68)	1.108 (28.14)	.443 (11.25)	1.579 (40.11)	1.944 (49.38)	1-15/16-20UNEF-2A	1-3/8-18UNEF-2A	.840 (21.34)	1.790 (45.47)	1.020 (25.91)
18	1.126 (28.60)	1.441 (36.60)	.145 (3.68)	1.233 (31.32)	.443 (11.25)	1.705 (43.31)	2.022 (51.36)	1-1/16-18UNEF-2A	1-1/2-18UNEF-2A	.840 (21.34)	1.790 (45.47)	1.020 (25.91)
20	1.251 (31.78)	1.566 (39.78)	.171 (4.34)	1.358 (34.49)	.469 (11.91)	1.829 (46.46)	2.147 (54.53)	1-3/16-18UNEF-2A	1-5/8-18UNEF-2A	.840 (21.34)	1.790 (45.47)	1.020 (25.91)
22	1.376 (33.95)	1.691 (42.95)	.171 (4.34)	1.483 (37.67)	.469 (11.91)	2.017 (51.23)	2.271 (57.68)	1-5/16-18UNEF-2A	1-3/4-18UNS-2A	.840 (21.34)	1.930 (49.02)	1.020 (25.91)
24	1.501 (38.13)	1.816 (46.13)	.171 (4.34)	1.610 (40.89)	.469 (11.91)	2.142 (54.41)	2.396 (60.86)	1-7/16-18UNEF-2A	1-7/8-18UNS-2A	.860 (21.84)	1.900(48.26)	1.080 (27.43)

Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22 and 23.

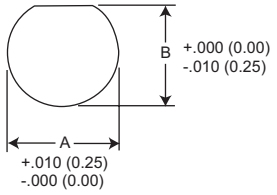
Panel Cutouts

Flange Mounted Receptacle



Shell Size	A Dia.	P Dia.	R	Mfg. Screw
8	.610 (15.49)	.125 (3.18)	.594 (15.09)	#4
10	.734 (18.64)	.125 (3.18)	.719 (18.26)	#4
12	.860 (21.84)	.125 (3.18)	.812 (20.62)	#4
14	.985 (25.02)	.125 (3.18)	.906 (23.01)	#4
16	1.110 (28.19)	.125 (3.18)	.969 (24.61)	#4
18	1.234 (31.34)	.125 (3.18)	1.062 (26.97)	#4
20	1.360 (35.54)	.125 (3.18)	1.156 (29.36)	#4
22	1.484 (37.69)	.125 (3.18)	1.250 (31.75)	#4
24	1.611 (40.92)	.152 (3.86)	1.375 (34.93)	#6

Jam Nut Receptacle

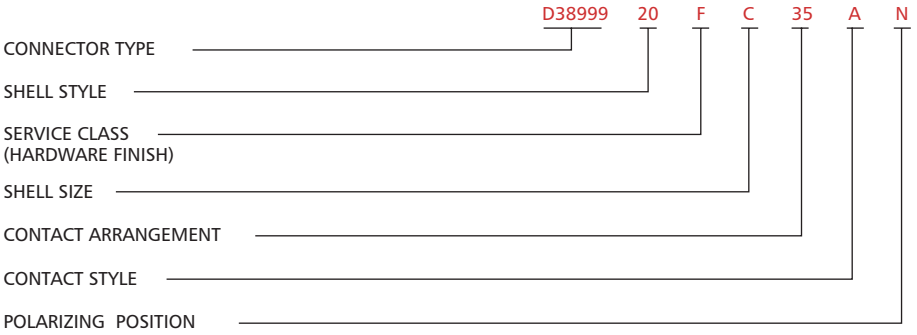


Shell Size	A Dia.	B Dia.
8	.885 (22.48)	.830 (21.08)
10	1.010 (25.65)	.955 (24.26)
12	1.135 (28.82)	1.085 (27.56)
14	1.260 (32.00)	1.210 (30.73)
16	1.385 (35.18)	1.335 (33.91)
18	1.510 (38.35)	1.460 (37.08)
20	1.635 (41.53)	1.585 (40.26)
22	1.760 (44.70)	1.710 (43.43)
24	1.885 (47.88)	1.835 (46.61)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

How To Order

Military Nomenclature



CONNECTOR TYPE
D38999/ - MIL-DTL-38999 Series III

SHELL STYLE
D38999/20 - Wall mount receptacle
D38999/24 - Jam nut receptacle
D38999/26 - Straight Plug, Grounded

SERVICE CLASS
(Hardware Finish)
F - Electroless nickel - 85ºF to +392ºF (-65ºC to +200ºC)
G - Electroless nickel plated. Space Grade.
W - Olive drab cadmium over electroless nickel plate, -85ºF to +347ºF (-65ºC to +175ºC)

SHELL SIZE

A	B	C	D	E	F	G	H	J	Military Designation
9	11	13	15	17	19	21	23	25	Cannon Designation

CONTACT ARRANGEMENT
See pages 22, 23.

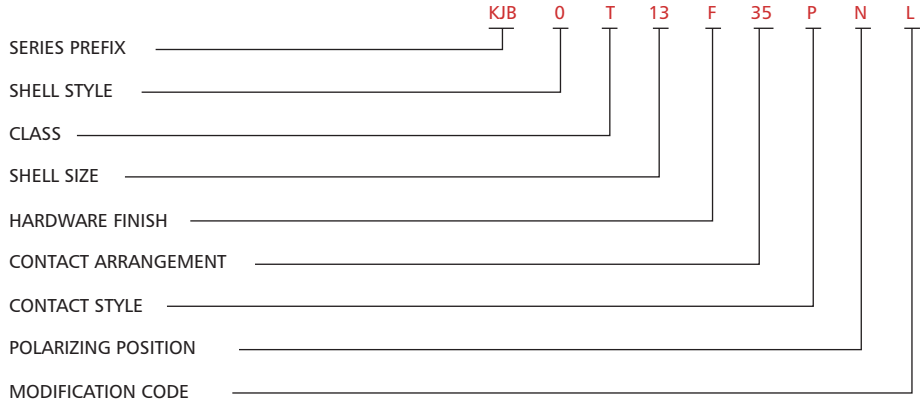
CONTACT STYLE
P - Pin contacts
S - Socket contact
A - Less Pin contacts*
B - Less Socket contact*

* Used only when other than power contacts are to be installed (i,e., shielded, thermocouple, etc.)

POLARIZING POSITION
N (normal), A, B, C, D, E. See page 19.

Note: To order MS connectors less standard power contacts, purchase order must state “Less Contacts”.

Cannon Nomenclature



SERIES PREFIX
KJA/KJB* - Series III - Scoop proof, threaded coupling

SHELL STYLE
0 - Wall mount receptacle
5 - Box mount receptacle*
6 - Straight plug
7 - Jam nut receptacle

CLASS
T - Environment-resistant (without rear accessory)

* Consult factory for availability

SHELL SIZE

9	11	13	15	17	19	21	23	25	Cannon Designation
A	B	C	D	E	F	G	H	J	Military Designation

HARDWARE FINISH
F - Electroless nickel, - 85ºF to +392ºF (-65ºC to +200ºC)
G - Electroless nickel plated. Space Grade.
W - Olive drab cadmium over electroless nickel plate, -85ºF to +347ºF (-65ºC to +175ºC)
Z - Zinc Nickel, Black
- - (Dash) When using a finish modification code

CONTACT ARRANGEMENTS
See pages 22 and 23.

CONTACT STYLE
P -Pin contacts
S -Socket contacts

POLARIZING POSITION
N (normal) A, B, C, D, E. See page 19.

MODIFICATION CODE
L - Less contacts, not stamped on connector
16 - Outgassed NASA space graded connector
17 - Clinch Nuts installed (4-40 Size 9-21, 6-32 Size 23-25)
27 - Outgassed, standard connector
A296 Black Zinc Cobalt, RoHS Compliant

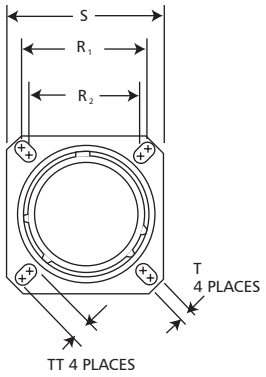
See page 26 for ordering PC Standoff Contacts using modification codes.

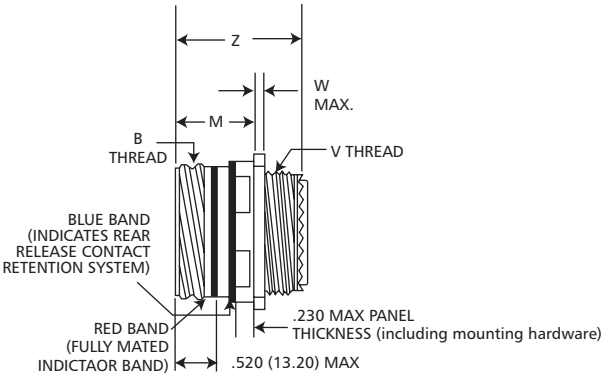
Wall Mount Receptacle

D38999/20



KJA0/KJB0





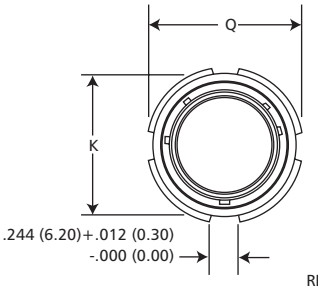
Shell Size	MS Shell size Code	B Thread Class 2A (Plated)	M +.000 (.000) -.005 (.130)	R 1	R 2	S +_.012 (.300)	T +.004 (.100) -.002 (.050)	TT +.004 (.100) -.002 (.050)	Metric V Thread (Plated)	W Max.	Z +.005 (.130) -.010 (.250)
9	A	.6250-0.1P-0.3L-TS	.820 (20.83)	.719 (18.26)	.594 (15.09)	.938 (23.83)	.128 (3.25)	.216 (5.49)	M12X1-6g0.100R	.098 (2.50)	1.235 (31.36)
11	B	.7500-0.1P-0.3L-TS	.820 (20.83)	.812 (20.62)	.719 (18.26)	1.031 (26.19)	.128 (3.25)	.194 (4.93)	M15X1-6g0.100R	.098 (2.50)	1.235 (31.36)
13	C	.8750-0.1P-0.3L-TS	.820 (20.83)	.906 (23.01)	.812 (20.62)	1.125 (28.58)	.128 (3.25)	.194 (4.93)	M18X1-6g0.100R	.098 (2.50)	1.235 (31.36)
15	D	1.0000-0.1P-0.3L-TS	.820 (20.83)	.969 (24.61)	.906 (23.01)	1.219 (30.96)	.128 (3.25)	.173 (4.39)	M22X1-6g0.100R	.098 (2.50)	1.235 (31.36)
17	E	1.1875-0.1P-0.3L-TS	.820 (20.83)	1.062 (26.97)	.969 (24.61)	1.312 (33.32)	.128 (3.25)	.194 (4.93)	M25X1-6g0.100R	.098 (2.50)	1.235 (31.36)
19	F	1.2500-0.1P-0.3L-TS	.820 (20.83)	1.156 (29.36)	1.062 (26.97)	1.438 (36.53)	.128 (3.25)	.194 (4.93)	M28X1-6g0.100R	.098 (2.50)	1.235 (31.36)
21	G	1.3750-0.1P-0.3L-TS	.790 (20.07)	1.250 (31.75)	1.156 (29.36)	1.562 (39.67)	.128 (3.25)	.194 (4.93)	M31X1-6g0.100R	.126 (3.20)	1.235 (31.36)
23	H	1.5000-0.1P-0.3L-TS	.790 (20.07)	1.375 (34.92)	1.250 (31.75)	1.688 (42.88)	.154 (3.91)	.242 (6.15)	M34X1-6g0.100R	.126 (3.20)	1.235 (31.36)
25	J	1.6250-0.1P-0.3L-TS	.790 (20.07)	1.500 (38.10)	1.375 (34.92)	1.812 (46.02)	.154 (3.91)	.242 (6.15)	M37X1-6g0.100R	.126 (3.20)	1.235 (31.36)

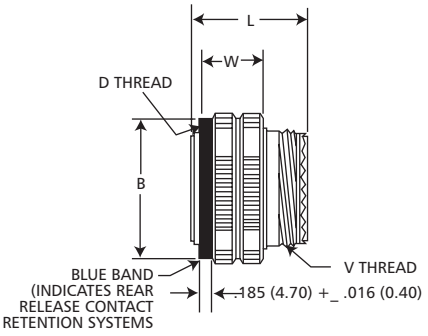
Straight Plug Grounded

D38999/26



KJA6/KJB6





Shell Size	MS Shell size Code	B +.008 (.200) -.000 (.000)	D Thread Class 2B (Plated)	K Max.	L Max.	Q Dia Max.	Metric V Thread (Plated)	W +.008 (.200) -.004 (.100)
9	A	.724 (18.40)	.6250-0.1P-0.3L-TS	.748 (19.00)	1.234 (31.34)	.859 (21.82)	M12X1-6g0.100R	.760 (19.30)
11	B	.831 (21.10)	.7500-0.1P-0.3L-TS	.862 (21.90)	1.234 (31.34)	.969 (24.61)	M15X1-6g0.100R	.760 (19.30)
13	C	1.000 (25.40)	.8750-0.1P-0.3L-TS	1.027 (26.10)	1.234 (31.34)	1.141 (28.98)	M18X1-6g0.100R	.760 (19.30)
15	D	1.130 (28.70)	1.0000-0.1P-0.3L-TS	1.153 (29.30)	1.234 (31.34)	1.266 (32.16)	M22X1-6g0.100R	.760 (19.30)
17	E	1.268 (32.20)	1.1875-0.1P-0.3L-TS	1.291 (32.80)	1.234 (31.34)	1.391 (35.53)	M25X1-6g0.100R	.760 (19.30)
19	F	1.374 (34.90)	1.2500-0.1P-0.3L-TS	1.398 (35.50)	1.234 (31.34)	1.500 (38.10)	M28X1-6g0.100R	.760 (19.30)
21	G	1.500 (38.10)	1.3750-0.1P-0.3L-TS	1.524 (38.70)	1.234 (31.34)	1.625 (41.28)	M31X1-6g0.100R	.760 (19.30)
23	H	1.618 (41.40)	1.5000-0.1P-0.3L-TS	1.642 (41.70)	1.234 (31.34)	1.750 (44.45)	M34X1-6g0.100R	.760 (19.30)
25	J	1.744 (44.30)	1.6250-0.1P-0.3L-TS	1.768 (44.90)	1.234 (31.34)	1.875 (47.62)	M37X1-6g0.100R	.760 (19.30)

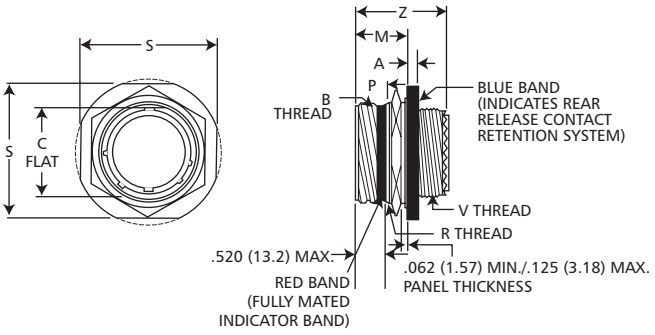
Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22 and 23.

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Jam Nut Receptacle

D38999/24 KJA7/KJB7



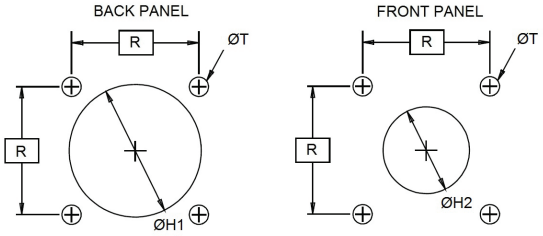


Shell Size	MS Shell size Code	A +.010 (.250) -.005 (.130)	B Thread Class 2A (Plated)	C +.004 (.100) -.010 (.250)	Z +.005 (.130) -.040 (.100)	M +.005 (.130) -.004 (.100)	P +.016 (.410) -.004 (.100)	S	Metric R Thread (Plated)	Metric V Thread (Plated)
9	A	.104 (2.64)	.6250-0.1P-0.3L-TS	.651 (16.53)	1.243 (31.57)	.871 (22.12)	.555 (14.10)	1.062 (26.97)	M17X1-6g0.100R	M12X1-6g0.100R
11	B	.104 (2.64)	.7500-0.1P-0.3L-TS	.751 (19.07)	1.243 (31.57)	.871 (22.12)	.555 (14.10)	1.250 (31.75)	M20X1-6g0.100R	M15X1-6g0.100R
13	C	.104 (2.64)	.8750-0.1P-0.3L-TS	.938 (23.82)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.375 (34.92)	M25X1-6g0.100R	M18X1-6g0.100R
15	D	.104 (2.64)	1.0000-0.1P-0.3L-TS	1.062 (26.97)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.500 (38.10)	M28X1-6g0.100R	M22X1-6g0.100R
17	E	.104 (2.64)	1.1875-0.1P-0.3L-TS	1.187 (30.15)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.625 (41.28)	M32X1-6g0.100R	M25X1-6g0.100R
19	F	.135 (3.43)	1.2500-0.1P-0.3L-TS	1.312 (33.32)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.812 (46.02)	M35X1-6g0.100R	M28X1-6g0.100R
21	G	.135 (3.43)	1.3750-0.1P-0.3L-TS	1.437 (36.50)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.938 (49.23)	M38X1-6g0.100R	M31X1-6g0.100R
23	H	.135 (3.43)	1.5000-0.1P-0.3L-TS	1.562 (39.67)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	2.062 (52.37)	M41X1-6g0.100R	M34X1-6g0.100R
25	J	.135 (3.43)	1.6250-0.1P-0.3L-TS	1.687 (42.85)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	2.188 (55.38)	M44X1-6g0.100R	M37X1-6g0.100R

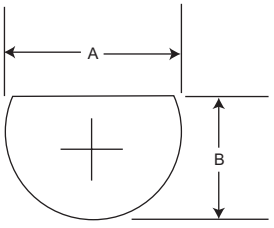
Performance Specifications-Pages 3 and 4.
Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.
Contact Arrangements - Pages 22 and 23.

Panel Cutouts

Wall Mounted Receptacle



Jam Nut Receptacle

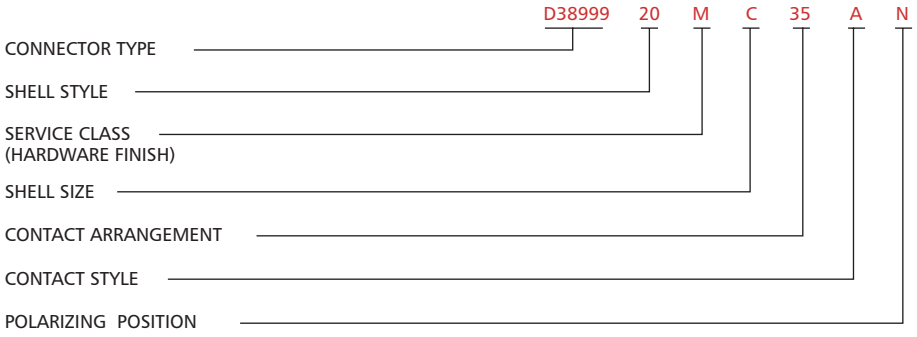


Shell Size	A +.010 (.25) -.000 (.00)	B +.000 (.00)* -.010 (.25)	ØH1 (Min.)	ØH2 (Min.)	R (TP)	ØT ±.050 (.13)
9	.693 (17.6)	.657 (16.70)	.656 (16.66)	.516 (13.11)	.719 (18.26)	.128 (3.25)
11	.825 (20.96)	.771 (19.58)	.796 (20.22)	.625 (15.88)	.812 (20.62)	.128 (3.25)
13	1.010 (25.65)	.955 (24.26)	.922 (23.42)	.750 (19.05)	.906 (23.01)	.128 (3.25)
15	1.135 (28.83)	1.085 (27.56)	1.047 (26.59)	.906 (23.01)	.969 (24.61)	.128 (3.25)
17	1.260 (32.00)	1.210 (30.73)	1.219 (30.96)	1.016 (25.81)	1.062 (26.97)	.128 (3.25)
19	1.385 (35.18)	1.335 (33.91)	1.297 (32.94)	1.141 (28.98)	1.156 (29.36)	.128 (3.25)
21	1.510 (38.35)	1.460 (37.08)	1.422 (36.12)	1.266 (36.16)	1.250 (31.75)	.128 (3.25)
23	1.635 (41.53)	1.585 (40.26)	1.547 (39.29)	1.375 (34.92)	1.375 (34.92)	.154 (391)
25	1.760 (44.70)	1.710 (43.43)	1.672 (42.47)	1.484 (37.69)	1.500 (38.10)	.150 (3.81)

* For Dimension B, Shell Size 9 only, tolerance is ±.004 (.10)

How To Order

Military Nomenclature



CONNECTOR TYPE
D38999/ - MIL-DTL-38999 Series III

SHELL STYLE
D38999/20 - Wall mount receptacle
D38999/26 - Straight Plug, Grounded

SERVICE CLASS
(Hardware Finish)
J - Olive drab cadmium over electroless nickel plate, -85ºF to +347ºF (-65ºC to +175ºC)
M - Electroless nickel - 85ºF to +392ºF (-65ºC to +200ºC), RoHS Compliant

SHELL SIZE

A	B	C	D	E	F	G	H	J	Military Designation
9	11	13	15	17	19	21	23	25	Cannon Designation

CONTACT ARRANGEMENT
See pages 22, 23.

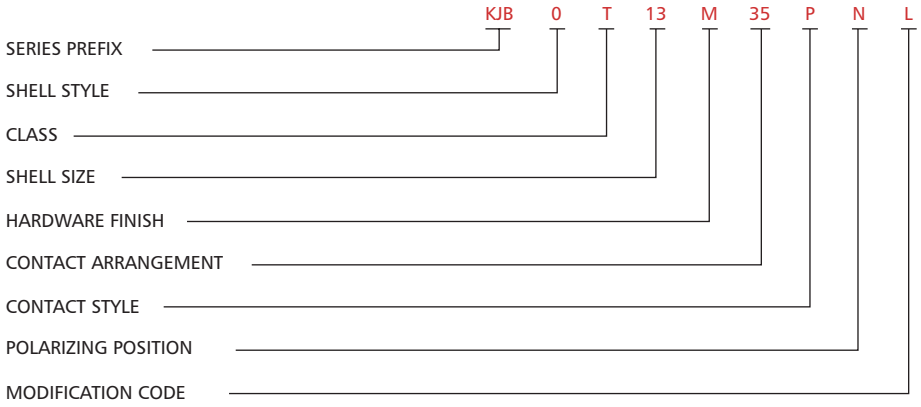
CONTACT STYLE
H - Pin conatcts (1500 cycle)
J - Socket contacts (1500 cycle)
P - Pin conatcts
S - Socket contact
A - Less Pin contacts*
B - Less Socket contact*

* Used only when other than power contacts are to be installed (i,e., shielded, thermocouple, etc.)

POLARIZING POSITION
N (normal), A, B, C, D, E. See page 21.

Note: To order MS connectors less standard power contacts, purchase order must state "Less Contacts".

Cannon Nomenclature



SERIES PREFIX
KJB* - Series III - Scoop proof, threaded coupling

SHELL STYLE
0 - Wall mount receptacle
6 - Straight plug

CLASS
T - Environment-resistant (without rear accessory)

* Consult factory for availability

SHELL SIZE

9	11	13	15	17	19	21	23	25	Cannon Designation
A	B	C	D	E	F	G	H	J	Military Designation

HARDWARE FINISH
J - Olive drab cadmium over electroless nickel plate, -85ºF to +347ºF (-65ºC to +175ºC)
M - Electroless nickel, - 85ºF to +392ºF (-65ºC to +200ºC), RoHS Compliant

CONTACT ARRANGEMENTS
See pages 22 and 23.

CONTACT STYLE
H - Pin conatcts (1500 cycle)
J - Socket contacts (1500 cycle)
P - Pin contacts
S - Socket contacts

POLARIZING POSITION
N (normal) A, B, C, D, E. See page 21.

MODIFICATION CODE
L - Less contacts, not stamped on connector

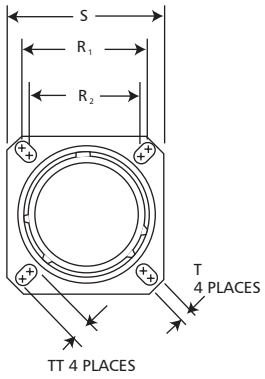
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

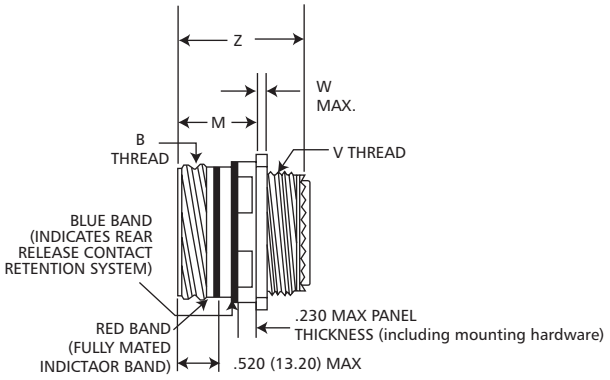
Wall Mount Receptacle

D38999/20

KJB0T







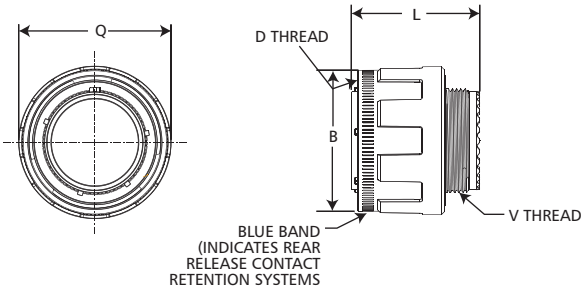
Shell Size	MS Shell size Code	B Thread Class 2A (Plated)	M +.000 (.000) -.005 (.130)	R 1	R 2	S +_.012 (.300)	T +.004 (.100) -.002 (.050)	TT +.004 (.100) -.002 (.050)	Metric V Thread (Plated)	W Max.	Z +.005 (.130) -.010 (.250)
9	A	.6250-0.1P-0.3L-TS	.768 (19.50)	.719 (18.26)	.594 (15.09)	.938 (23.83)	.128 (3.25)	.216 (5.49)	M12X1-6g0.100R	.143 (3.63)	1.255 (32.00)
11	B	.7500-0.1P-0.3L-TS	.768 (19.50)	.812 (20.62)	.719 (18.26)	1.031 (26.19)	.128 (3.25)	.194 (4.93)	M15X1-6g0.100R	.143 (3.63)	1.255 (32.00)
13	C	.8750-0.1P-0.3L-TS	.768 (19.50)	.906 (23.01)	.812 (20.62)	1.125 (28.58)	.128 (3.25)	.194 (4.93)	M18X1-6g0.100R	.143 (3.63)	1.255 (32.00)
15	D	1.0000-0.1P-0.3L-TS	.768 (19.50)	.969 (24.61)	.906 (23.01)	1.219 (30.96)	.128 (3.25)	.173 (4.39)	M22X1-6g0.100R	.143 (3.63)	1.255 (32.00)
17	E	1.1875-0.1P-0.3L-TS	.768 (19.50)	1.062 (26.97)	.969 (24.61)	1.312 (33.32)	.128 (3.25)	.194 (4.93)	M25X1-6g0.100R	.143 (3.63)	1.255 (32.00)
19	F	1.2500-0.1P-0.3L-TS	.768 (19.50)	1.156 (29.36)	1.062 (26.97)	1.438 (36.53)	.128 (3.25)	.194 (4.93)	M28X1-6g0.100R	.143 (3.63)	1.255 (32.00)
21	G	1.3750-0.1P-0.3L-TS	.736 (18.70)	1.250 (31.75)	1.156 (29.36)	1.562 (39.67)	.128 (3.25)	.194 (4.93)	M31X1-6g0.100R	.171 (4.35)	1.255 (32.00)
23	H	1.5000-0.1P-0.3L-TS	.736 (18.70)	1.375 (34.92)	1.250 (31.75)	1.688 (42.88)	.154 (3.91)	.242 (6.15)	M34X1-6g0.100R	.171 (4.35)	1.255 (32.00)
25	J	1.6250-0.1P-0.3L-TS	.736 (18.70)	1.500 (38.10)	1.375 (34.92)	1.812 (46.02)	.154 (3.91)	.242 (6.15)	M37X1-6g0.100R	.171 (4.35)	1.255 (32.00)

Straight Plug Grounded

D38999/26

KJB6T





Shell Size	MS Shell size Code	B +.008 (.200) -.000 (.000)	L Max.	Q Dia Max.
9	A	.811 (20.6)	1.24 (31.5)	.858 (21.8)
11	B	.929 (23.6)	1.24 (31.5)	.984 (25.0)
13	C	1.11 (28.2)	1.24 (31.5)	1.157 (29.4)
15	D	1.23 (31.3)	1.24 (31.5)	1.27 (32.5)
17	E	1.35 (34.5)	1.24 (31.5)	1.40 (35.7)
19	F	1.46 (37.3)	1.24 (31.5)	1.51 (38.5)
21	G	1.59 (40.5)	1.24 (31.5)	1.64 (41.7)
23	H	1.72 (43.7)	1.24 (31.5)	1.76 (44.9)
25	J	1.84 (46.8)	1.24 (31.5)	1.88 (48.0)

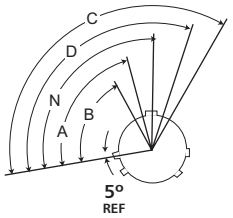
Performance Specifications-Pages 3 and 4.

Contacts, Sealing Plugs, Assembly Tools - Pages 24, 31, and 32.

Contact Arrangements - Pages 22 and 23.

Polarizing Positions

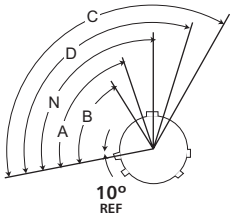
Series I



Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

Shell Size	Angle of Rotation (Degrees) Normal	A	B	C	D
9	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°

Series II

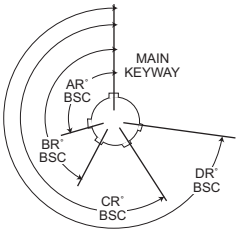


Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

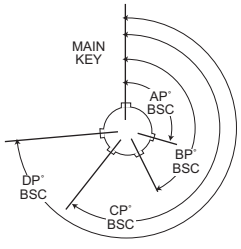
D	Shell Size	Angle of Rotation (Degrees) Normal	A	B	C	
	8	100°	82°			118°
	10	100°	86°	72°	128°	114°
	12	100°	80°	68°	132°	120°
	14	100°	79°	66°	134°	121°
	16	100°	82°	70°	130°	118°
	18	100°	82°	70°	130°	118°
	20	100°	82°	70°	130°	118°
	22	100°	85°	74°	126°	115°
	24	100°	85°	74°	126°	115°

Series III

RECEPTACLE
(Front face shown)



PLUG
(Front face shown)



NOTES

1. All Angles are BSC
2. The insert arrangement does not rotate with main key/keyway
3. All minor keys are rotated to provide shell polarization, the master key remains fixed at twelve o'clock position.
4. Polarization is different from Series I and II.

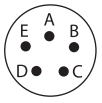
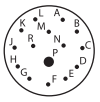
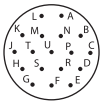
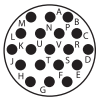
Shell Size	Key & Keyway Arrangement identification Letter	Key Locations AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
11 13 and 15	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
17 and 19	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
21 23 and 25	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272

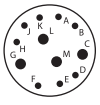
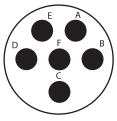
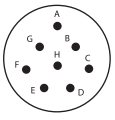
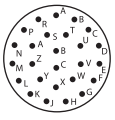
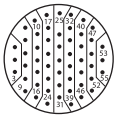
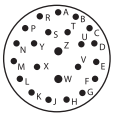
Contact Arrangements (Engaging View Pin Insert)

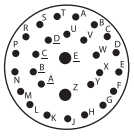
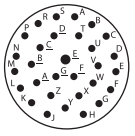
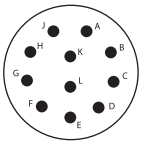
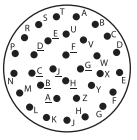
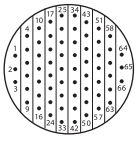
* Socket insert only
** Pin insert only (Not available in socket insert Series I and III)

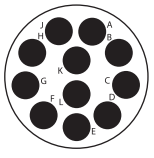
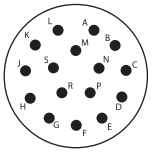
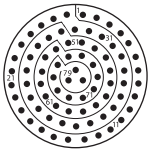
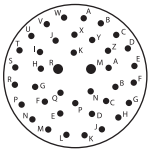
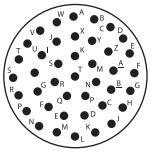
Indicates layouts are available in all shell styles including MS27499, MS27508, KJ2E and KJ5E
† Consult factory MS27505E/KJL5E insert availability

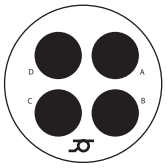
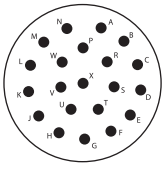
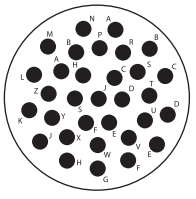
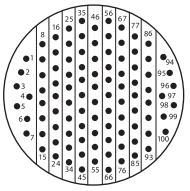
									
Series III	9-98	9-35	-	11-5	11-98	-	11-35	-	-	13-8
Series II	8-98†	8-35†	-	10-5†	10-98†	10-99†	10-35†	12-3	12-4†	12-8†
Series I	9-98	9-35	11-4	11-5	11-98	11-99	11-35	-	13-4**	13-8
No. of Contacts	3 #20	6 #22D	4 #20	5 #20	6 #20	7 #20	13 #22D	3 #16	4 #16	8 #20
Service Ratings	I	M	I	I	I	I	M	II	I	I

							
Series III	13-98	13-35	15-5	15-15	15-18	15-19	15-35
Series II	12-98†	12-35†	14-5†	14-15†	14-18†	-	14-35†
Series I	13-98	13-35	15-5	15-15	15-18	15-19	15-35
No. of Contacts	10 #20	22 #22D	5 #16	14 #20,1 #16	18 #20	19 #20	37 #22D
Service Ratings	I	M	II	I	I	I	M

							
Series III	15-97	17-6	17-8	17-26	17-35	–	-
Series II	14-97†	16-6	16-8†	16-26†	16-35†	16-42†	16-99†
Series I	15-97	17-6	17-8	17-26	17-35	–	17-99**
No. of Contacts	8 #20,4 #16	6 #12	8 #16	26 #20	55 #22D	42 #22	21 #20,2 #16
Service Ratings	I	I	II	I	M	M	I

					
Series III	-	-	19-11	19-32	19-35
Series II	18-28	18-30	18-11	18-32†	18-35†
Series I	19-28**	19-30**	19-11	19-32	19-35
No. of Contacts	26 #20,2 #16	29 #20, 1 #16	11 #16	32 #20	66 #22D
Service Ratings	I	I	II	I	M

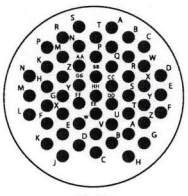
					
Series III	21-11	21-16	21-35	21-39	21-41
Series II	-	20-16†	20-35†	20-39†	20-41†
Series I	21-11	21-16	21-35	21-39	21-41
No. of Contacts	11 #12	16 #16	79 #22D	37 #20,2 #16	41- #20
Service Ratings	I	II	M	I	I

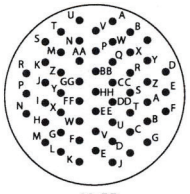
				
Series III	21-75	23-21	-	23-35
Series II	-	22-21	22-32	22-35†
Series I	21-75*•	23-21	23-32**	23-35
No. of Contacts	4 #8 Twinax	21 #16	32 #20	100 #22D
Service Ratings	M	II	I	M

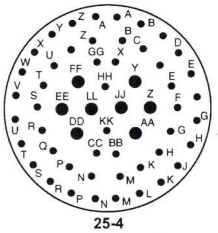
Contact Arrangements (Engaging View Pin Insert)

* Socket insert only
** Pin insert only (Not available in socket insert Series I and III

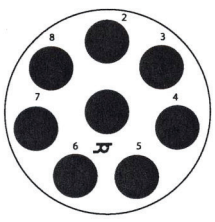
† Indicates layouts are available in all shell styles including MS27499, MS27508, KJ2E and KJ5E
• Consult factory for MS27505E/KJL5E insert availability

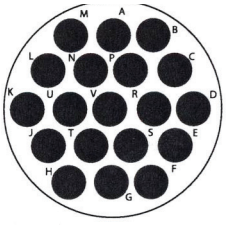


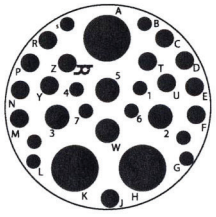


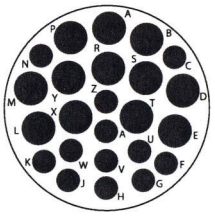


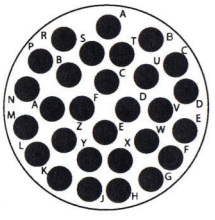
Series III	23-53	23-55	25-4
Series II	22-53†	22-55†	24-4†
Series I	23-53	23-55	25-4
No. of Contacts	53 #20	55 #20	48 #20,8 #16
Service Ratings	I	I	I



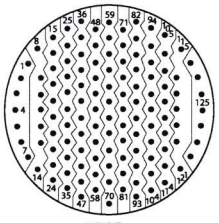


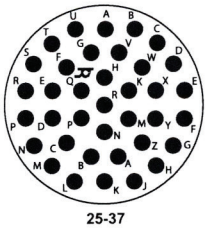


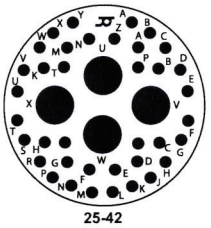


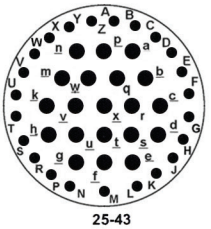


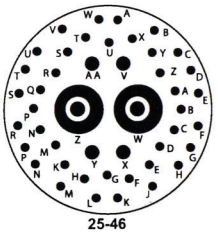
Series III	25-8	25-19	25-20	25-24	25-29
Series II	-	-	-	24-24†	24-29†
Series I	25-8••	25-19	25-20•	25-24	25-29
No. of Contacts	8 #8 Twinax	19 #12	3 #8 Twinax, 13 #16, 4 #12 Coax, 10 #20	12 #16,12 #12	29 #16
Service Ratings	Twinax	I	N / Coax / Twinax	I	I



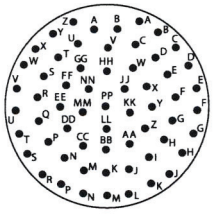


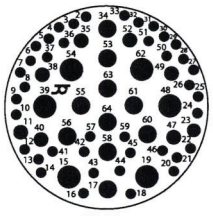


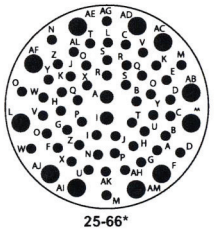




Series III	25-35	25-37	25-42	25-43	25-46
Series II	24-35†	-	-	-	-
Series I	25-35	25-37•	25-42•	25-43	25-46
No. of Contacts	128 #22D	37 #16	38 #20,4 #8 Coax	23 #20,20 #16	40 #20,4 #16,2 #8
Service Ratings	M	II I	I, Coax	I	Twinax





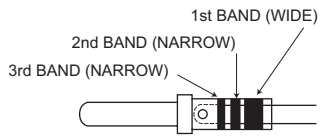


Series III	25-61	25-64	25-66*
Series II	24-61†	-	-
Series I	25-61	25-64	25-66•
No. of Contacts	61 #20	40 #22D,8 #20 10 #16,6 #12	53 #22D,2 #20,11 #16
Service Ratings	I	I	I

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Contacts-Pin (Series I/II/III)

MIL-C-39029/58



Contact Size	Color Bands 1	2	3	Cannon Part Number	AS39029 Military Part Number
22D	Orange	Blue	Black	980-0008-878	AS39029/58-360
20	Orange	Blue	Orange	980-0008-879	AS39029/58-363
16	Orange	Blue	Yellow	980-0008-880	AS39029/58-364
12	Orange	Blue	Green	980-0008-881	AS39029/58-365

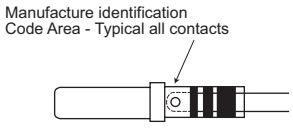
MIL-C-39029/107 **H Contacts (1500 Cycle)**

Contact Size	Color Bands 1	2	3	Cannon Part Number	AS39029 Military Part Number
22D	Blue	Red	Black	980-0010-032	AS39029/107-620
20	Blue	Red	Brown	980-0010-033	AS39029/107-621
16	Blue	Red	Red	980-0010-034	AS39029/107-622
12	Blue	Red	Orange	980-0010-035	AS39029/107-623

Contact Size		Cannon Part Number	Cable Accomodations
8 Coax	95 Ohms	249-2196-000	RG-180
		249-2196-001	RG-174, 179, 316
		249-2196-002	RG-142
8 Twinax	75 Ohms	980-1000-012	M17/176-00002
12 Coax		980-1000-016	RG-174, 179, 316

Contacts-Socket (Series II)

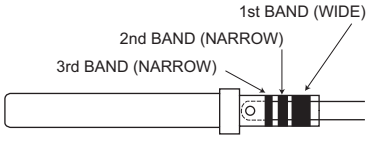
MIL-C-39029/57 **KJ**



Contact Size	Color Bands 1	2	3	Cannon Part Number	AS39029 Military Part Number
22D	Orange	Green	Yellow	980-0008-874	AS39029/57-354
20	Orange	Green	Violet	980-0008-875	AS39029/57-357
16	Orange	Green	Gray	980-0008-876	AS39029/57-358
12	Orange	Green	White	980-0008-877	AS39029/57-359

Contacts-Socket (Series I & III)

MIL-C-39029/56



Contact Size	Color Bands 1	2	3	Cannon Part Number	AS39029 Military Part Number
22D	Orange	Yellow	Gray	980-0008-870	AS39029/56-348
20	Orange	Green	Brown	980-0008-871	AS39029/56-351
16	Orange	Green	Red	980-0008-872	AS39029/56-352
12	Orange	Green	Orange	980-0008-873	AS39029/56-353

MIL-C-39029/106 **J Contacts (1500 Cycle)**

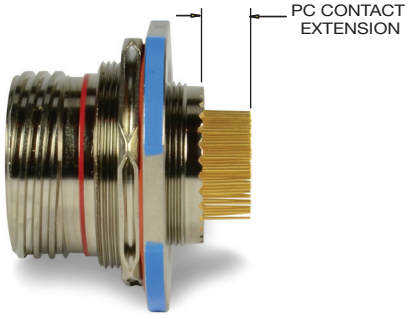
Contact Size	Color Bands 1	2	3	Cannon Part Number	AS39029 Military Part Number
22D	Blue	Brown	Yellow	980-0008-993	AS39029/106-614
20	Blue	Brown	Green	980-0008-994	AS39029/106-615
16	Blue	Brown	Blue	980-0008-995	AS39029/106-616
12	Blue	Brown	Violet	980-0008-996	AS39029/106-617

Contact Size		Cannon Part Number	Cable Accomodations
8 Coax	95 Ohms	249-2195-000	RG-180
		249-2195-001	RG-174, 179, 316
		249-2195-002	RG-142
8 Twinax	75 Ohms	980-1000-013	M17/176-00002
12 Coax		980-1000-015	RG-174, 179, 316

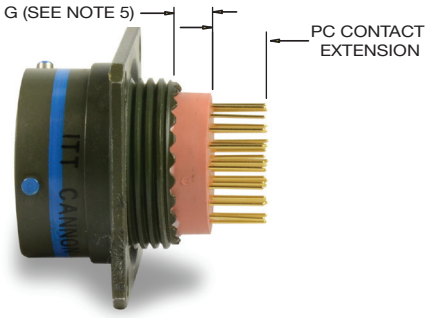
Contacts-Printed Circuit Board

PIN PRINTED CIRCUIT CONTACT EXTENSION FROM REAR OF CONNECTOR (MAX / MIN)

PC CONTACT PART NUMBER	CONTACT SIZE	TAIL DIA. ±.001	MS27466 MS27467 KJL0	MS27656 MS27468 KJL3 / KJL7	MS27505E KJL5E	MS27472 MS27474 KJ0 / KJ7	MS27499E MS27508E KJ2E / KJ5E	MS27513E MS27497 / NO MS KJ2R / KJ3 / KJ5R	D38999/20 KJB0 KJA0	D38999/24 KJA7 (9-17)	D38999/24 KJA7 (19-25)
030-2097-002	22D	0.020	0.261 0.189	0.244 0.176	0.408 0.376	0.264 0.226	0.408 0.376	0.264 0.226	0.262 0.200	0.280 0.216	0.258 0.198
030-2097-006	22D	0.020	0.069 N/A	0.052 N/A	0.216 0.184	0.072 0.034	0.216 0.184	0.072 0.034	0.070 0.008	0.088 0.024	0.066 0.006
030-2097-008	22D	0.020	0.216 0.144	0.199 0.131	0.363 0.331	0.219 0.181	0.363 0.331	0.219 0.181	0.217 0.155	0.235 0.171	0.213 0.153
030-2097-015	22D	0.020	0.293 0.221	0.276 0.208	0.440 0.408	0.296 0.258	0.440 0.408	0.296 0.258	0.294 0.232	0.312 0.248	0.290 0.230
030-1997-006	20	0.025	0.166 0.094	0.149 0.081	0.313 0.281	0.169 0.131	0.313 0.281	0.169 0.131	0.167 0.105	0.185 0.121	0.163 0.103
030-1997-022	20	0.025	0.281 0.209	0.264 0.196	0.428* 0.396*	0.284 0.246	0.428* 0.396*	0.284 0.246	0.282 0.220	0.300 0.236	0.278 0.218
030-1997-030	20	0.019	0.364 0.292	0.347 0.279	0.511 0.479	0.367 0.329	0.511 0.479	0.367 0.329	0.365 0.303	0.383 0.319	0.361 0.301
030-1995-023	16	0.062	0.278 0.206	0.261 0.193	0.425 0.393	0.281 0.243	0.425 0.393	0.281 0.243	0.279 0.217	0.297 0.233	0.275 0.215
030-1995-024	16	0.062	0.118 0.046	0.101 0.033	0.265 0.233	0.121 0.083	0.265 0.233	0.121 0.083	0.119 0.057	0.137 0.073	0.115 0.055



(KJL0/3/7 & KJA0/7)



(KJL5E & KJ0/2E/2R/3/5E/5R/7)

SOCKET (SERIES II) PRINTED CIRCUIT CONTACT EXTENSION FROM REAR OF CONNECTOR (MAX / MIN)

PC CONTACT PART NUMBER	CONTACT SIZE	TAIL DIA. ±.001	MS27472 MS27474 KJ0 / KJ7	MS27499E MS27508E KJ2E / KJ5E	MS27513E MS27497 / NO MS KJ2R / KJ3 / KJ5R
031-1186-006	22D	0.020	0.179 0.141	0.323 0.291	0.179 0.141
031-1186-011	22D	0.020	0.109 0.071	0.253 0.221	0.109 0.071
031-1186-013	22D	0.020	0.217 0.179	0.361 0.329	0.217 0.179
031-1186-021	22D	0.020	0.262 0.224	0.406 0.374	0.262 0.224
031-1124-021	20	0.025	0.247 0.209	0.391* 0.359*	0.247 0.209
031-1123-007	16	0.062	0.101 0.063	0.245 0.213	0.101 0.063

SOCKET (SERIE I & III) PRINTED CIRCUIT CONTACT EXTENSION FROM REAR OF CONNECTOR (MAX / MIN)

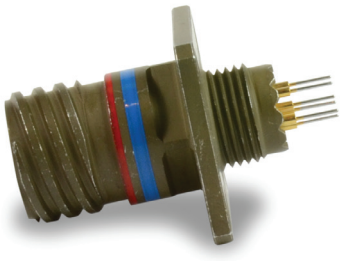
PC CONTACT PART NUMBER	CONTACT SIZE	TAIL DIA. ±.001	MS27466 MS27467 KJL0	MS27656 MS27468 KJL3 / KJL7	MS27505E KJL5E	D38999/20 KJB0 KJA0	D38999/24 KJA7 (9-17)	D38999/24 KJA7 (19-25)
031-1147-014	22D	0.020	0.244 0.172	0.227 0.159	0.391* 0.359*	0.245 0.183	0.263 0.199	0.241 0.181
031-1147-039	22D	0.020	0.168 0.096	0.151 0.083	0.315* 0.283*	0.169 0.107	0.187 0.123	0.165 0.105
031-1147-040	22D	0.020	0.438 0.366	0.421 0.353	0.585* 0.553*	0.439 0.377	0.457 0.393	0.435 0.375
031-1124-040	20	0.025	0.486 0.414	0.469 0.401	0.633 0.601	0.487 0.425	0.505 0.441	0.483 0.423
031-1123-020	16	0.029	0.272 0.200	0.255 0.187	0.419 0.387	0.273 0.211	0.291 0.227	0.269 0.209

NOTES: UNLESS OTHERWISE SPECIFIED.

1. PC CONTACTS HAVE GOLD PLATING OVER SUITABLE UNDERPLATE PER MIL-C-39029 SPECIFICATION.
2. PC CONTACT EXTENSIONS APPLY TO ITT CANNON CONNECTORS ONLY FOR ALL SHELL SIZES.
3. N/A INDICATES NO EXTENSION.
4. * INDICATES PC TAIL WITH STEP EXTENDING FROM REAR OF CONNECTOR.
5. G DIM. IS .031 +/- .016 FOR KJL5E AND .120 +/- .030 (SHELL SIZES 8 THRU 22) AND .090 +/- .050 (SHELL SIZE 24) FOR KJ0/2E/2R/3/5E/5R/7.
6. FOR OTHER SPECIFIC PC CONTACT DATA, CONSULT ITT EC, SANTA ANA, CA, USA.

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

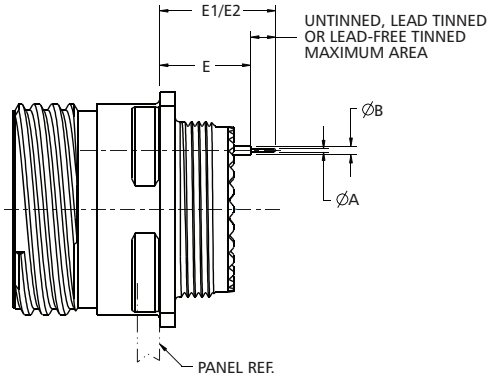
38999 Series III Modification Codes: PC Standoff Contacts installed



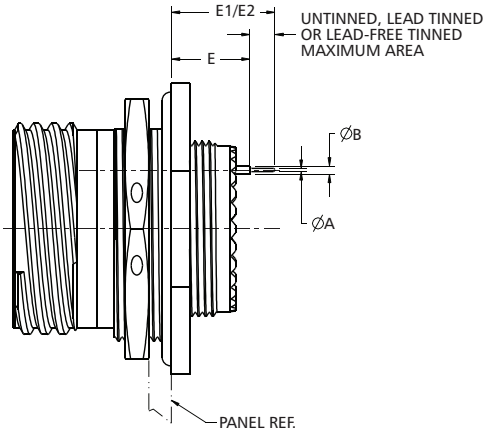
KJB Wall Mount with
PC Standoff Contacts installed

HOW TO ORDER

Modification Code	Definition
100	Untinned PC contacts with extensions E & E1
101	Lead tinned PC contacts with extensions E & E1
102	Lead-free tinned PC contacts with extensions E & E1
103	Untinned PC contacts with extensions E & E2
104	Lead tinned PC contacts with extensions E & E2
105	Lead-free tinned PC contacts with extensions E & E2



KJB0 WALL MOUNT



KJB7 JAM NUT

Contact Style	Dimension	KJB7T (Jam Nut) 9 to 25	KJB0T (Wall Mount) 9 to 19	KJB0T (Wall Mount) 21 to 25
P	E	.392 / .436 (9.96 / 11.07)	.459 / .503 (11.66 / 12.78)	.489 / .533 (12.42 / 13.54)
	E1	.611 / .671 (15.52 / 17.04)	.687 / .738 (17.22 / 18.75)	.708 / .768 (17.98 / 19.51)
	E2	.749 / .809 (19.02 / 20.54)	.816 / .876 (20.72 / 22.25)	.846 / .906 (21.48 / 23.01)
S	E	.392 / .436 (9.96 / 11.07)	.459 / .503 (11.66 / 12.78)	.489 / .533 (12.42 / 13.54)
	E1	.611 / .671 (15.52 / 17.04)	.687 / .738 (17.22 / 18.75)	.708 / .768 (17.98 / 19.51)
	E2	.749 / .809 (19.02 / 20.54)	.816 / .876 (20.72 / 22.25)	.846 / .906 (21.48 / 23.01

Contact Size	ØA Max.	ØB Min.
22D	.028 (.71)	.044 (1.12)
20	.036 (.91)	.052 (1.32)
16	.068 (1.73)	.084 (2.13)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Contact Sealing Bushings

Size 8 Twinax Sealing Bushing 321-1035-000
Used with the Twinax contact in Twinax layouts for sealing cable size M17/176-00002

Size 8 Coax Sealing Bushing 321-1034-001
Used with the Coax contact in Twinax layouts for sealing cable size RG-180



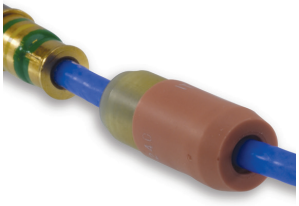
Twinax Grommet

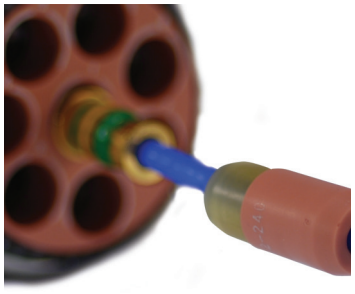


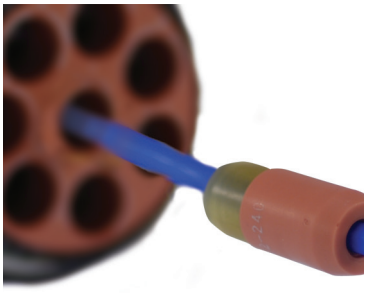
Coax Grommet

Contact Sealing Bushing Sequence into Twinax Grommet

(Bushing only used with Twinax grommet)









Wire Sizes and Diameters

Contact Size	Wire size (AWG)	Finished wire outside dimensions	
		Minimum	Maximum
22D	28, 26, 24, 22	0.030	0.054
22M*	28, 26, 24	0.030	0.050
22*	26, 24, 22	0.034	0.060
20	24, 22, 20	0.040	0.083
16	20, 18, 16	0.065	0.109
12	14, 12	0.097	0.142
8 Coax	RG-180	0.136	0.146
8 Twinax	M17/176-00002	0.124	0.134
12 Coax	RG174, 179, 316	0.094	0.102

*For reference only

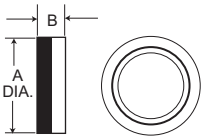
Recommended Jam Nut Torque Values

Series II		Series I & III	
Shell Size	Inch-Pounds	Shell Size	Inch-Pounds
8	46/50	9	30/36
10	55/60	11	40/46
12	70/75	13	55/60
14	80/85	15	70/75
16	90/95	17	80/85
18	100/110	19	90/95
20	110/120	21	100/110
22	120/130	23	110/120
24	140/150	25	120/130

Coupling Nut Torque Values (Series I, II and III)

Maximum engagement and disengagement		Minimum disengagement
Shell Size	Inch Pound	Inch Pound
8	8	2
9	8	2
10	12	2
11	12	2
12	16	2
13	16	2
14	20	4
15	20	3
16	24	4
17	24	3
18	28	5
19	28	3
20	32	6
21	32	5
22	36	7
23	36	5
24	36	7
25	40	5

Backshell - Type E (Straight), Series II only

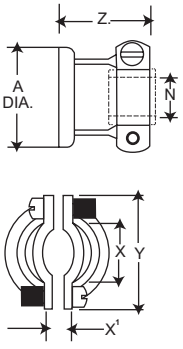


Shell Size Series II	A Dia. Max.	B Dia. Max.
8	.580 (14.73)	.328 (8.33)
10	.705 (17.91)	.328 (8.33)
12	.830 (21.08)	.328 (8.33)
14	.955 (24.26)	.328 (8.33)
16	1.080 (27.32)	.328 (8.33)
18	1.205 (30.61)	.328 (8.33)
20	.330 (33.78)	.328 (8.33)
22	1.455 (36.96)	.328 (8.33)
24	1.555 (39.50)	.270 (6.86)

How To Order

Shell Size	Finishes A	B	C	N
Series II	Cadmium/Nickel-Clear Part Number	Cadmium/Nickel-O.D Part Number	Anodic Non-Cond. Part Number	Electroless Nickel Part Number
8	057-0776-000	057-0862-000	057-0819-000	057-0776-002
10	057-0777-000	057-0863-000	057-0820-000	057-0777-002
12	057-0778-000	057-0864-000	057-0821-000	057-0778-002
14	057-0779-000	057-0846-000	057-0822-000	057-0779-002
16	057-0780-000	057-0847-000	057-0823-000	057-0780-002
18	057-0781-000	057-0848-000	057-0824-000	057-0781-002
20	057-0782-000	057-0849-000	057-0825-000	057-0782-002
22	057-0783-000	057-0850-000	057-0826-000	057-0783-002
24	057-0784-000	057-0851-000	057-0827-000	057-0784-002

Backshell - Type F (Cable Clamp)



Shell Size Series I	Shell Size Series II	A Max.	N Dia. Max.	X Dia. Min.	X [1] Dia. Min.	Y Max.	Z Max.
9	8	.508 (14.73)	.135 (3.43)	.234 (5.94)	.187 (4.75)	.829 (21.06)	.813 (20.65)
11	10	.705 (17.91)	.198 (5.03)	.297 (7.54)	.187 (4.75)	.891 (22.63)	.813 (20.65)
13	12	.830 (21.08)	.322 (7.18)	.422 (10.72)	.281 (7.14)	1.016 (25.81)	.813 (20.65)
15	14	.955 (24.26)	.385 (9.78)	.547 (12.89)	.325 (8.26)	1.141 (28.98)	.813 (20.65)
17	16	1.080 (27.43)	.510 (12.95)	.609 (15.47)	.356 (9.04)	1.203 (30.56)	.933 (23.70)
19	18	1.205 (30.61)	.635 (16.13)	.734 (18.64)	.456 (11.58)	1.469 (37.31)	.933 (23.70)
21	20	1.330 (33.78)	.635 (16.13)	.734 (18.64)	.519 (13.18)	1.469 (37.31)	.933 (23.70)
23	22	1.455 (36.96)	.760 (19.30)	.922 (23.42)	.519 (13.18)	1.656 (42.06)	.933 (23.70)
25	24	1.555 (39.50)	.810 (20.57)	.984 (24.99)	.657 (16.69)	1.750 (44.45)	.893 (22.68)

How To Order (MS Version)

MS27506 - A - 8 - 2

Military Designation
MS27506 Type F Straight with Cable Clamp

Finish
A - Cad/Nickel (Clear)
B - Cad/Nickel (O.D)
F - Nickel (Electroless)

Shell Size
Series I - 9, 11, 13, 15, 17, 19, 21, 23, 25
Series II - 8, 10, 12, 14, 16, 18, 20, 22, 24

Adapter
Geometry - 2

Shell Size Series I	Shell Size Series II	MS Part Number	Cannon Part Number	Finishes A Cannon	A MS	B Cannon	B MS	N Cannon	F MS
9	8	27506-*8-2	057-3005-***	-012	A	-013	B	-015	F
11	10	27506-*10-2	057-3006-***	-011	A	-012	B	-014	F
13	12	27506-*12-2	057-3007-***	-012	A	-013	B	-015	F
15	14	27506-*14-2	057-3008-***	-010	A	-011	B	-013	F
17	16	27506-*16-2	057-3009-***	-012	A	-013	B	-015	F
19	18	27506-*18-2	057-3010-***	-013	A	-014	B	-016	F
21	20	27506-*20-2	057-3011-***	-011	A	-013	B	-015	F
23	22	27506-*22-2	057-3012-***	-015	A	-016	B	-018	F
25	24	27506-*24-2	057-3013-***	-013	A	-014	B	-017	F

* MS Finish *** Cannon Finish

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Backshell Series III

M85049/ 38 S 9 W

Military Designator

Type
- Straight Cable Clamp 38
- 90° with Cable Clamp 39

Configuration
- Self Locking S
- Nonself Locking*

*For Nonself locking, leave designator blank

Shell Size Series III
9, 11, 13, 15, 17, 19, 21, 23, 25

Finish
- Electroless Nickel N
- OD Cadmium over electroless nickel W



M85049/38

Straight Cable Clamp - Nonself Locking		
Shell Size Series III	Military Part Number Nickel	Military Part Number OD Cadmium
9	M85049/38-9W	M85049/38-9N
11	M85049/38-11W	M85049/38-11N
13	M85049/38-13W	M85049/38-13N
15	M85049/38-15W	M85049/38-15N
17	M85049/38-17W	M85049/38-17N
19	M85049/38-19W	M85049/38-19N
21	M85049/38-21W	M85049/38-21N
23	M85049/38-23W	M85049/38-23N
25	M85049/38-25W	M85049/38-25N

Straight Cable Clamp - Self Locking		
Shell Size Series III	Military Part Number Nickel	Military Part Number OD Cadmium
9	M85049/38S-9W	M85049/38S-9N
11	M85049/38S-11W	M85049/38S-11N
13	M85049/38S-13W	M85049/38S-13N
15	M85049/38S-15W	M85049/38S-15N
17	M85049/38S-17W	M85049/38S-17N
19	M85049/38S-19W	M85049/38S-19N
21	M85049/38S-21W	M85049/38S-21N
23	M85049/38S-23W	M85049/38S-23N
25	M85049/38S-25W	M85049/38S-25N

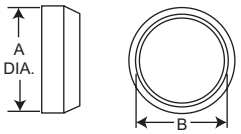


M85049/39

90° with Cable Clamp - Nonself Locking		
Shell Size Series III	Military Part Number Nickel	Military Part Number OD Cadmium
9	M85049/39-9W	M85049/39-9N
11	M85049/39-11W	M85049/39-11N
13	M85049/39-13W	M85049/39-13N
15	M85049/39-15W	M85049/39-15N
17	M85049/39-17W	M85049/39-17N
19	M85049/39-19W	M85049/39-19N
21	M85049/39-21W	M85049/39-21N
23	M85049/39-23W	M85049/39-23N
25	M85049/39-25W	M85049/39-25N

90° with Cable Clamp - Self Locking		
Shell Size Series III	Military Part Number Nickel	Military Part Number OD Cadmium
9	M85049/39S-9W	M85049/39S-9N
11	M85049/39S-11W	M85049/39S-11N
13	M85049/39S-13W	M85049/39S-13N
15	M85049/39S-15W	M85049/39S-15N
17	M85049/39S-17W	M85049/39S-17N
19	M85049/39S-19W	M85049/39S-19N
21	M85049/39S-21W	M85049/39S-21N
23	M85049/39S-23W	M85049/39S-23N
25	M85049/39S-25W	M85049/39S-25N

Backshell - Type P (Potting Boot)



Shell Size			
Series I	Series II	A Dia. Max.	B Dia. Max.
9	8	.598 (15.19)	.434 (11.02)
11	10	.723 (18.36)	.548 (13.92)
13	12	.847 (21.51)	.673 (17.09)
15	14	.969 (24.61)	.798 (20.27)
17	16	1.087 (27.61)	.899 (22.83)
19	18	1.211 (30.76)	1.024 (26.01)
21	20	1.336 (33.93)	1.141 (29.98)
23	22	1.461 (37.11)	1.274 (32.36)
25	24	1.586 (40.28)	1.399 (35.53)

How To Order (MS Version)

MS27486 - 10 - 1

MS Designation
Shell Size
Series I - 9, 11, 13, 15, 17, 19, 21, 23, 25
Series II - 8, 10, 12, 14, 16, 18, 20 , 22 , 24
1 - Straight Cup

NOTE: When ordering the MS version you must specify both MS numbers for the Potting Boot and the Adapter Ring.

Shell Size		MS27486 Part Number	Cannon Part Number
Series I	Series II		
9	8	27486-**-1	040-0185-000
11	10	27486-**-1	040-0169-000
13	12	27486-**-1	040-0170-000
15	14	27486-**-1	040-0171-000
17	16	27486-**-1	040-0172-000
19	18	27486-**-1	040-0173-000
21	20	27486-**-1	040-0174-000
23	22	27486-**-1	040-0175-000
25	24	27486-**-1	040-0176-000

** Only even numbered shell size is applicable.

Potting Boot Adapter Ring

How To Order (MS Version)

MS27485 - A - 8

Miltary Designation
Finish
A - Cad/Nickel (Clear)
B - Cad/Nickel (O.D)
F - Nickel (Electroless)
Shell Size
Series I - 9, 11, 13, 15, 17, 19, 21, 23, 25
Series II - 8, 10, 12, 14, 16, 18, 20 , 22 , 24

NOTE: When ordering the MS version you must specify both MS numbers for the Potting Boot and the Adapter Ring.

Shell Size				Finishes					
				A Cadmium/Nickel Clear		B Cadmium/Nickel-O.D		N Electroless	F Nickel
Series I	Series II	MS27485 Part Number	Cannon Part Number	Cannon	MS	Cannon	MS	Cannon	MS
9	8	27485-*-**	237-0887-***	-000	A	-001	B	-002	F
11	10	27485-*-**	237-0874-***	-000	A	-001	B	-002	F
13	12	27485-*-**	237-0875-***	-000	A	-001	B	-002	F
15	14	27485-*-**	237-0876-***	-000	A	-001	B	-002	F
17	16	27485-*-**	237-0877-***	-000	A	-001	B	-002	F
19	18	27485-*-**	237-0878-***	-000	A	-001	B	-002	F
21	20	27485-*-**	237-0879-***	-000	A	-001	B	-002	F
23	22	27485-*-**	237-0880-***	-000	A	-001	B	-003	F
25	24	27485-*-**	237-0881-***	-000	A	-001	B	-003	F

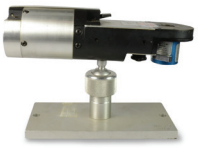
* MS Finish
** Only even numbered shell size is applicable
*** Cannon Finish

Wire Sealing Plugs

Series III Size	Series I & II Size	Part Number		Color Code
		Cannon	MS27488	
22D	22D	225-1013-000	MS27488-22-2	Black
20	20	225-0070-000	MS27488-20-2	Red
16	16	225-0104-000	MS27488-16-2	Green
12	12	225-0105-000	MS27488-12-2	Orange

Wire sealing plugs meet MS27488 standards. The plugs are color coded according to size for easy identification. Wire sealing plugs may be ordered separately.

Tools - Crimp

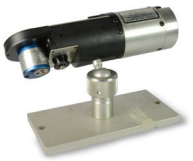


M22520/1-01

CBT-530



M22520/2-01



CBT-565

Contact Size	Pin Contact Series I/II/III		Socket Contact Series II		Socket Contact Series I & III	
	Crimp Tool Part Number	Locator or Turret Part Number	Crimp Tool Part Number	Locator or Turret Part Number	Crimp Tool Part Number	Locator or Turret Part Number
22D or 22M*	M22520/2-01	M22520/2-09	M22520/2-01	M22520/2-06	M22520/2-01	M22520/2-07
22*	M22520/2-01	M22520/2-09	M22520/2-01	M22520/2-06	M22520/2-01	M22520/2-07
20	M22520/1-01	M22520/1-04 OR TH 187	M22520/1-01	M22520/1-04	M22520/1-01	M22520/1-04
16	M22520/1-01	M22520/1-04 OR TH 187	M22520/1-01	M22520/1-04	M22520/1-01	M22520/1-04
12	M22520/1-01	M22520/1-04	M22520/1-01	M22520/1-04	M22520/1-01	M22520/1-04
8 Coax						
Inner Conductor	Crimp Tool	Crimp Tool Locator	Outer Conductor		Crimp Tool	Crimp Tool Locator
RG180	M22520/2-01	995-0002-268	RG180		M22520/5-01	M22520/5-39B
RG 174, 179, 316	M22520/2-01	995-0002-268	RG 174, 179, 316		M22520/5-01	M22520/5-37B
RG 142	M22520/2-01	995-0002-268	RG 142		M22520/5-01	M22520/5-19B
12 Coax						
Inner Conductor	Crimp Tool	Crimp Tool Locator	Outer Conductor		Crimp Tool	Crimp Tool Locator
RG174, 179, 316	M22520/2-01	M22520/2-34	RG174, 179, 316		M22520/31-01	M22520/31-02
8 Twinax	Crimp Tool	Crimp Tool Locator				
Center Contact	M22520/2-01	K709				
Intermediate Contact	M22520/5-01	Y631 Die Closure B				
Outer Contact	M22520/5-01	Y631 Die Closure A				

* For reference only

Tools - Plastic



Insertion/Extraction

Contact Size	Cannon Description	Cannon Part Number	M81969 Part Number	Superseded Military Part Number	Insertion Color Tip	Extraction Color Tip
22D	CIET-22D-01	274-7048-000	M81969/14-01	MS27534-22D	Green	White
22M*	CIET-22D-01	274-7048-000	M81969/14-01	MS27534-22D	Green	White
20	CIET-20-10	274-7001-000	M81969/14-10	MS27534-20	Red	Orange
16	CIET-16-03	274-7002-000	M81969/14-03	MS27534-16	Blue	White
12	CIET-12-04	274-7003-000	M81969/14-04	MS27534-12	Yellow	White
8 Coax/Twinax	CET8-T	323-7004-001	—	—	—	—
12 Coax	CIET-12-04	274-7003-000	M81969/14-04	M527534-12	Yellow	White

Insertion tool not required for size 8

Tools - Metal (MS)



Insertion



Extraction

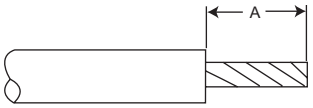
Contact Size	Insertion			Extraction			
	MS27495 Part Number	ITT CANNON Part Number	Color Band	MS27495 Part Number	ITT CANNON Part Number	Color Band No.1	Color Band No.2
22D OR 22M*	MS27495 A22M	995-0001-718	Black	MS27495 R22M	995-0001-719	Black	White
22*	MS27495 A22	995-0001-720	Brown	MS27495 R22	995-0001-721	Brown	White
20	MS27495 A20	995-0001-716	Red	MS27495 R20	995-0001-717	Red	White
16	MS27495 A16	995-0001-732	Blue	MS27495 R16	995-0001-731	Blue	White

Band No. 1 indicates tool size.
Band No. 2 indicates removal tool.
* For reference only

Assembly Instructions

Wire Stripping

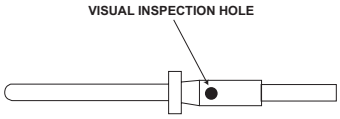
Strip insulation from end of wire to be crimped. (See table for proper stripping dimensions.) Do not cut or damage wire strands.



Wire Size	A
22D or 22M*	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

* For reference only

Contact Crimping



1. Insert stripped wire into contact crimp pot. Wire must be visible thru inspection hole.





2. Using correct crimp tool and locator, cycle the tool once to be sure the indentors are open. Insert contact and wire into locator. Squeeze tool handles firmly and completely to insure a proper crimp. The tool will not release unless the crimp indentors in the tool head have been fully actuated.

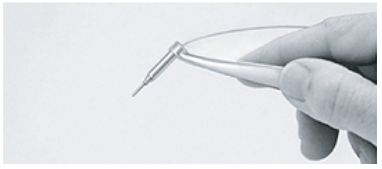


. Release crimped contact and wire from tool. Be certain the wire is visible thru inspection hole in contact.

Contact Insertion



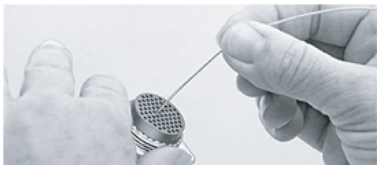
1. Remove hardware from plug or receptacle and slip over wire bundle in proper order for reassembly.



2. Using proper plastic or metal insertion tool for corresponding contact, position wire in tip of the tool so that the tool tip butts up against the contact shoulder.



3. Press tool against contact shoulder and, with firm and even pressure, insert wired contact and tool tip into center contact cavity. A slight click may be heard as metal retaining tines snap into place behind contact shoulder.

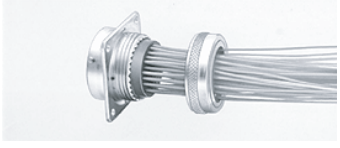


4. Remove tool and pull back lightly on wire to make sure contact is properly seated. Repeat operation with remainder of contacts to be inserted, beginning with the center cavity and working outward in alternating rows.



5. After all contacts are inserted, fill any empty cavities with wire sealing plugs, Ressemble plug or receptacle hardware.

Contact Extraction



1. Remove hardware from plug or receptacle and slide hardware back along wire bundle.



2. Using plastic or metal extraction tool with proper color code corresponding to contact size, place wire in tool.



3. Insert tool into contact cavity until tool tip bottoms against the contact shoulder, expanding clip retaining tines.



4. Hold wire firmly in tool and extract wired contact and tool. Repeat operation for all contacts to be extracted.



5. Fill any empty wire cavities with wire sealing plugs, and



6. Reassemble plug or receptacle.

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

MIL-DTL-38999 Specifications

The following excerpts are some of the parameter requirements of the MIL-DTL-3899 Specification.

Test Description	Paragraph Reference	Requirements
Contact Retention	4 5 19	After preloading to 3 pounds maximum, the force shall be applied at a rate of approximately 1 pound per second and maintained at full load for 5-10 seconds. No damage to contacts or insert shall result nor shall the contacts be dislocated from their normal position in the connector more than 0.012 inch under the given load. Failure to meet these requirements shall be cause for rejection.
Coupling Torque	4 5 6	For qualification testing, mating halves shall be coupled and uncoupled, measuring the torques necessary.The torques required to couple and uncouple mating connector halves shall fall within the limits specifications as follows:
Durability	4 5 7	Connector halves shall be mated and unmated 250 times for Series II with ground fingers and 500 times for Series I and III at a rate not exceeding 300 cycles per hour. The test may be performed by hand or by mechanical means, but the coupling ring shall be operated as in normal service. Failure to complete this test because of mechanical malfunction shall be cause for rejection.
Insulation Resistance	4 5 9	An insulation resistance test shall be performed on unmated connectors in accordance with MIL-STD-202, Method 302, Test condition B. Measurement shall be made between three pairs of adjacent contacts and the shell. Failure to meet the minimum requirement of 50,000 megohms for Classes E, P, F, R, and T shall be cause for rejection.
Vibration	4 5 22	Wired, mated connectors shall be subjected to the vibration test of MIL-STD-202, Method 214, Test Condition II, except that the duration shall be one hour in each plane. Receptacles shall be mounted on the vibration fixture by normal means. All contacts shall be wired in a series circuit and 100-500 millamperes of current shall be allowed to flow through the series circuit during vibration. Suitable means shall be employed to monitor the current flow and to indicate any discontinuity of more than 1 microsecond. The wire bundle shall be damped to the nonvibrating points at least 8 inches from the rear of the connector. Current discontinuity of 1 microsecond or more, disengagement of the mated connectors, evidence of cracking, breaking, or loosening of parts shall be cause for rejection.
Shock	4 5 23	Wired mated connectors shall be subjected to one shock in each direction in each of three mutually perpendicular axes. The pulse shall be approximate half sine wave of 300g ± 15% magnitude with a duration of 3 ± 1 milliseconds. Receptacles shall be mounted on a shock fixture by normal means. All contacts shall be wired in a series circuit and 100-150 ma. of current shall flow through the series circuit during shock. Suitable means shall be employed to monitor the current flow and to indicate any discontinuity of more than 1 microsecond. The wire bundle shall be clamped to fixed points at feast 8 inches from the rear of the connector, Current discontinuity of 1 microsecond or more, disengagement of the mated connectors, evidence of cracking, breaking, or loosening of parts shall be cause for rejection.
Thermal Shock	4 5 4	Unmated receptacles shall be subjected to 10 cycles of thermal shock in the following manner: Step a The receptacle shall be suspended for 10 + 1 - 0 minutes in the center of a cold water both with a volume of approximately one cubic foot. No dimension of the bath shall be less than 10 inches. The water temperature shall not exceed 4ºC (39.20ºF) Step b The receptacle shall be suspended for 10 1 - 0 minutes in the center of a hot water bath with a volume of approximately one cubic foot. No dimension of the bath shall be less than 10 inches. The water temperature shall be not less than 94ºC (201ºF). The time of transfer from one bath to the other shall not exceed 5 seconds. At the end of the tenth cycle, the receptacle shall have the excess moisture shaken off and shall then be dried in a forced air oven at 66±5˚C for 15 ±1 minutes. Any evidence of damage resulting from this test shall be cause for rejection.
Altitude Immersion	4 5 8	Mated connectors shall be placed in a container of water at approximately 20ºC and placed in an altitude chamber. All wire ends shall be located within the chamber and exposed to the chamber atmosphere, but not submerged. The exposed wire ends shall not be sealed. A quantity of salt, 5 percent by weight, shall be added to make the water conductive. The chamber pressure shall then be reduced to approximately one inch of mercury and maintained for thirty minutes. The chamber pressure shall then be slowly returned to atmospheric. This shall be considered one cycle. Two additional cycles shall be performed. At the end of the last cycle, while the mated connectors are still submerged, the Insulation Resistance Test (room temperature), and the High Potential Test (sea level voltages) shall be performed upon the same circuits. Failure to meet an insulation resistance minimum of 2,000 megohms or any evidence of dielectric breakdown or -flashover shall be cause for rejection.
Solvent Immersion	4 5 29	Unmated connectors shall be immersed fully in the applicable fluid specified below for 20 hours. After removal from the fluid, each connector shall remain for one hour in free air at room temperature. a.) Jet fuel JP-4 to MIL-J-5624 b.) Aircraft lubricating oil to MIL-L-9236
Corrosion	4 5 12	Unmated connectors and individual contact samples shall be subjected to the soft spray of MIL-STD-202, Method 101, Test Condition 8 (tin plated, Class Y receptacles-24 hours). Immediately after exposure, the surfaces of the specimens shall be thoroughly washed in tap water and dried in a circulatory oven at a temperature of 38 ±3ºC (100ºF) for a period of approximately 12 hours. Any exposure of basis metal as a result of this test, shall be cause for rejection.
Dynamic Salt Spray	4 5 12 2	(Series I and 11, finish B; Series III, class W). The wired assembled plugs and receptacles shall be mated and unmated 50 cycles at a rate of 300 cycles per hour maximum. The mating and unmating shall be accomplished so that the plug and receptacle are completely separated during each cycle. The connectors shall then be subjected to the salt spray test in accordance with method 1001 of MIL-STD- 1344. The connectors shall be tested for 452 hours mated followed by 48 hours unmated. After the salt spray exposure the remaining number of durability cycles specified in 4.7.7 shall be completed.
Temperature Durability	4 5 33	Wired rated connectors shall be subjected to the indicated anbient temperature for a period of 1,000 hours Series I and II (finish A) $150^{+3^\circ}_{-0^\circ C}$ (302° F) Series I and II (finish B) $175^{+3^\circ}_{-0^\circ C}$ (347° F) Series III (class W) $175^{+3^\circ}_{-0^\circ C}$ (347° F) All other finishes $200^{+3^\circ}_{-0^\circ C}$ (392° F)

Contact Size: 22M* | 22D | 22* | 20 | 18

Loads in Pounds ± 10%: 10 | 10 | 10 | 15 | 25

Shell Size	Torque Max.	Torque Min.	Shell Size	Torque Max.	Torque Min.	Shell Size	Torque Max.	Torque Min.	Shell Size	Torque Max.	Torque Min.
8/9	8	2	14	20	4	18	28	5	22	36	7
10/11	12	2	15	20	3	19	28	3	23	36	5
12	16	2	16	24	4	20	32	6	24	36	7
13	16	2	17	24	3	21	32	5	25	40	5

* For reference only

Product Safety and Warranty

1. MATERIAL CONTENT AND PHYSICAL FORM
Electrical connectors do not usually contain hazardous materials.

Electrical connectors and individual components do not release or otherwise result in exposure to hazardous chemicals under normal conditions of use and fall under the definition of "Article," under the Hazard Communication Standard, 29 CFR 1910.1200, and are not considered hazardous materials.

Solder and fluxes can be hazardous if inhaled or absorbed through the skin and should only be used as recommended by the manufacturer. Please consult your solder and flux manufacturer for more specific application recommendations.

2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD
There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning. Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock. If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

3. HANDLING
Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Always wear safety glasses to avoid potential injury to eyes during cleaning, soldering, fiber preparation, etc.

Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged. Proper lifting techniques shall be used for handling shipping cartons.

4. DISPOSAL
Please recycle, reclaim or dispose of connectors and individual components in accordance with local, state and federal laws. Incineration of certain materials may release noxious or even toxic fumes..

5. APPLICATION
Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the specified application tools, cleaning materials and assembly instructions documented in the Data Sheet/Catalog. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

IMPORTANT GENERAL INFORMATION
(i) Air and creepage paths/Operating voltage. The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations.
For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

(ii) Temperature
All information given are temperature limits. The operation temperature depends on the individual application.

(iii) Pressure
All pressure information given are differential pressure limits. The specific differential pressure limits, across the connector interface, are documented in the Data Safety/ catalog

(iv) Other important information
Cannon continuously endeavors to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

Commodities in this catalog may be controlled for export or re-export under the Export Administration Regulations (EAR), Nuclear Regulatory Commission (NRC) Regulations, or by the International Traffic in Arms Regulations (ITAR) when specifically designed, modified or configured for military use.

ITT Corporation Interconnect Solutions Division, ("ITT") manufactures high quality products. However, these products are intended to be used in accordance with the specifications in this publication. Any use or application that deviates from the stated operating specifications is not recommended and may be unsafe. No information and data contained in this publication shall be construed to create any liability on the part of ITT.

Product Warranty
A limited product warranty applies to ITT products. Please refer to www.ittcannon.com (General Terms and Conditions of Sale) for the complete text of ITT's applicable Terms and Conditions of Sale, including warranty.

This publication is not to be construed as an offer. It is intended merely as an invitation to make an offer. ITT does not assume liability for any patent infringement or violation of other rights claimed by third parties which may result from its use.

With prior written consent, reprinting this publication without any modifications is generally permitted.

"ITT", the Engineered Blocks Logo and "Engineered for life" are registered trademarks of ITT Corporation. All other trademarks or registered trademarks are property of their respective owners. All dates subject to change without notice.



ITT Cannon

ITT is a focused multi-industrial company that designs and manufactures highly engineered critical components and customized technology solutions. Our customers in the energy, transportation and industrial markets depend on us to solve their most critical problems, and we focus on partnering with them to find solutions to their unique challenges. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries. The company has sales in approximately 125 countries and generated 2014 revenues of $2.7 billion.

Our connector portfolio remains the most extensive in the industry, offering a reliable and cost effective range of interconnect solutions with the brands of Cannon, VEAM and BIW Connector Systems. Continuous investment in technology and research & development have enabled ITT to provide new, innovative products and solutions to markets including:

- Automotive
- Computer & Consumer Electronics
- Industrial/Instrumentation
- Military & Aerospace
- Oil & Gas
- Telecommunications/Wireless Handheld Devices
- Transportation

When you specify a Cannon, VEAM or BIW Connector Systems connector, you can rely on products that are designed, developed, and manufactured to the highest quality and reliability standards. This tradition of excellence is based on ITT's corporate culture of operating its businesses under the principles of Six Sigma. At ITT, Six Sigma is not just a quality philosophy but a complete corporate culture that drives the entire business. Our Value Based Management and Value Based Product Development systems are two cornerstones that allow for the development of both leadership and product engineering principles, ensuring our industry leading products are developed to the accepted market driven lead times. These principles have allowed ITT to become the market leader in all of our business portfolios.

Six Sigma Manufacturing

ITT Cannon operates manufacturing facilities in the United States, Germany, Italy, Mexico, China and Japan, all of which have particular product area strengths allowing ITT to offer a truly global footprint to our customers. Our facilities are world class and accommodate full vertical integration utilizing the latest manufacturing technologies including: automated and robotic machining centers, Super Market manufacturing cells, Kanban pull systems, and automated electrical, mechanical, and optical test and inspection equipment. The combination of our manufacturing strength and our advanced manufacturing facilities allows ITT to offer products at market driven prices. Our capabilities, especially in robotics, computerized precision tooling, Kaizen Project Management, Six Sigma tools, and testing, give ITT the most optimized global manufacturing footprint in the interconnect industry.

The Custom Difference

As the industry leader in harsh environment interconnect applications, ITT's world class engineering teams will work directly with our customers to design and develop cost effective solutions for their applications. In many cases we may modify one of our standard designs to ensure a highly reliable solution where timing is critical. Yet, in those cases where a complete custom interconnect solution is required, ITT will work with our customer's Engineers to design an interconnect solution which will be cost effective yet highly reliable. As professional consultants, our Engineering teams will provide a thorough systems and mechanical analysis of any proposed solution. These analyses provide our customers with sophisticated electrical signal and mechanical characterizations to determine the best solution for their application.

RoHS Compliance Information

ITT has implemented a strict parts control plan for all ITT electronics plants worldwide that allows the Cannon, VEAM, and BIW Connector Systems product portfolios to meet the requirements of the European Union Directive 2002/95/EC better known as the Reduction of Hazardous Substances (RoHS) initiative. As appropriate, specific Cannon, VEAM, and BIW Connector Systems products may be ordered with an R prefix number which insures our customers will receive RoHS compliant parts for their commercial electronics applications and equipment. Since most RoHS hazardous substances center around specific metal plating and lead solder coatings, ITT's products for RoHS compliance are available in the following plating finishes: electroless nickel, stainless steel, anodize over aluminum and gold plating. It should be noted that gold plating would be recommended as the replacement for tin-lead solder when ordering board mount connectors.

RoHS COMPLIANT PART NUMBERS

Meet Some of Our Most Popular Connectors

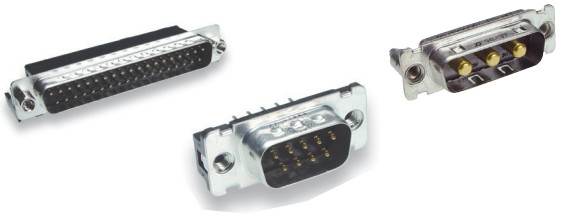
Circular/Filter/Hermetic/Fiber Optic Connectors

As a world leader in circular, filter and hermetic connectors, ITT Cannon leverages its design and manufacturing expertise to fit virtually any application. Our expertise includes fast positive mating for a wide range of military applications, as well as numerous sizes and contact configurations for harsh environments. Our wide variety of fiber optic products include hybrid contacts, multi-channel, rack and panel and hi-rel assemblies, including MIL and ARINC standard solutions. ITT can meet numerous specs, including NATO and MIL standards.



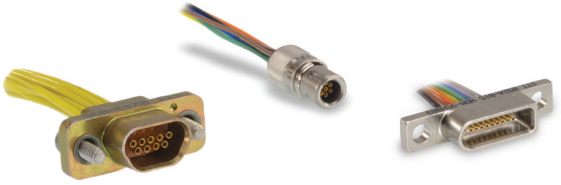
D-Subminiature Connectors

Cannon invented D-Sub connectors in 1952. Our family of D-Subs now includes combinations of signal, power and RF, as well as severe service sealed connectors. Cannon D-Sub are available with an extensive line of backshells and accessories and are one of the most economical shielded connector solutions available. Our D-Sub connectors are qualified to the MIL-DTL- 24308 specification.



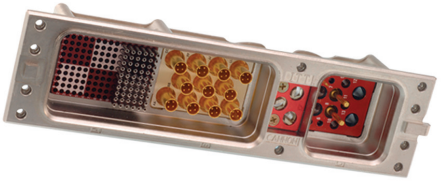
Microminiature Connectors

Developed first by Cannon in the 1960s, microminiature connectors offer high performance and reliability with exceptional versatility. Available in rectangular, circular and strip configurations for countless applications, many of our microminiature connectors meet or exceed applicable requirements of the MIL-DTL-83513 specification.



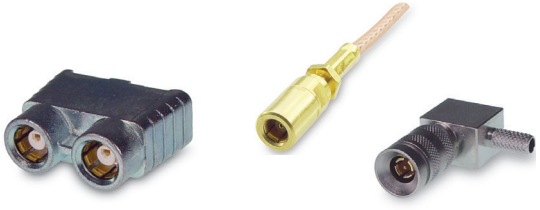
Rack and Panel Connectors

Initially pioneered by Cannon during the 1930s, our Rack and Panel Connectors offer an unmatched variety of shell configurations and insert arrangements, as well as materials, plating and contact options. Many of our standard and custom designs meet the stringent requirements of ARINC 600, ARINC 404 (MIL-C-81659) and MIL-DTL-83733 standards.



RF Connectors

Since 1963, Cannon has provided connectors to the Microwave and RF industry. The RF 50 & 75 Ohm product lines cover UHF band through Ku band requirements. These connectors and cable assemblies are available with a thread type, snap type, bayonet type or slide on coupling method. The frequencies range from DC to 18+ GHz.



Transportation

We offer a range of sealed circular and rectangular connectors in metal or plastic shells. These configurations include board to cable or cable to cable/ bulkhead applications. Both signal and power contacts can be combined in various layouts. All product lines within the Transportation segment offer very low contact resistance and deliver maximum signal integrity.



Connect with your ITT Cannon representative today or visit us at
www.ittcannon.com

Connect with the experts.

Whether communicating with our soldiers, or with our first responders saving lives, ITT Cannon connects the world's most important information with those who need it.

CHINA—Shenzhen City
+86.755.2726.7888

GERMANY—Weinstadt
+49.7151.699.0

HONG KONG
+852.2732.2720

ITALY—Lainate
+39.02938721

JAPAN—Kanagawa
+81.462.57.2010

KOREA—Seoul
+82.2.7027111

TAIWAN—Taipei
+886.2.25452020

UK—Basingstoke
+44.1256.311200

USA—Watertown, CT
+1.860.274.9681

USA—Orange County, CA
+1.800.854.3028

The "ITT Engineered Blocks" symbol, "Engineered for life", "ITT" and "Cannon" are registered trademarks of ITT Corporation.
Specification and other data are based on information available at the time of printing, and are subject to change without notice.

© 2015 ITT Corporation, Inc.

MIL_DTL_38999_Connectors_cat_201506