

# MIL-C-38999 Series I, II, III, IV Filter Connectors

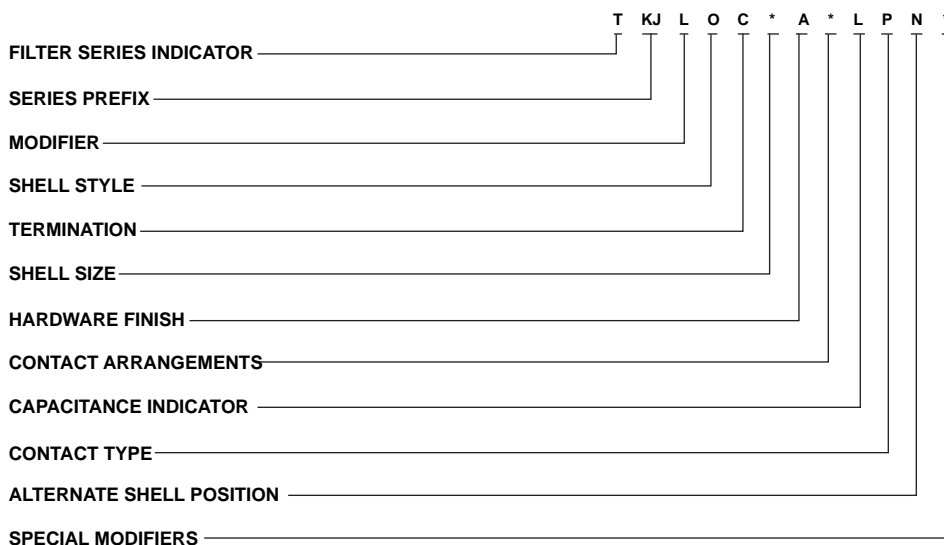


These miniature circular filter connectors are designed to combine the functions of a standard electrical connector and a feed-thru filter into one compact package. They are designed to meet the applicable portions of military specification MIL-C-38999 series I, II, III and IV. These connectors feature arrangements that will accommodate up to 12B contacts. Consult factory for socket versions.

For detailed dimensional information, request a copy of the ITT Cannon *Filter Connectors* catalog.

Note: The TKJ replaces the obsolete KJJ Series

## How to Order - TKJL/TKJ/TKJA/TKJB



### FILTER SERIES INDICATOR

T - Transverse Monolith

### SERIES PREFIX

KJ - ITT Cannon prefix

### MODIFIER

- L - Series I scoop-proof shell (omit if Series II desired)
- A - Series III Triple Start Thread (omit if Series II desired)
- B - Series IV - Available in receptacle only (omit if Series II desired)

### SHELL STYLE

- 0 - Wall mounting receptacle (front panel mounting)
- 2 - Box mounting (front panel mounting)
- 3 - Wall mounting (black panel mounting)
- 5 - Box mounting receptacle (back panel mounting)
- 7 - Jam nut receptacle

### NOTES:

- 1) Backshell thread and teeth. Series I and II - Provided only on shell types indicated on dimension sheets. Series III - No threads or teeth provided. Series IV - Provided with threads and teeth.
- 2) Hermetic versions of the filter connectors can be provided. Consult ITT Cannon for availability.
- 3) Series III and IV can only be shell style 0 or 7.

### TERMINATION

- C - Solder pot termination
- E - P.C. tails
- S - Crimp Piggyback
- W - Wire wraps

### SHELL SIZE

- Series I, III and IV:  
11, 13, 15, 17, 19, 21, 23, and 25
- Series II:  
10, 12, 14, 16, 18, 20, 22, and 24

### HARDWARE FINISH

- A - Bright cadmium over nickel plate
- B - Olive drab cadmium over nickel plate
- N - Electroless nickel plate (preferred)

### CONTACT ARRANGEMENTS

See page 315.

### CAPACITANCE INDICATOR\*

- L - 32,000-45,000 PF
- M - 8,000-12,000 PF
- T - 3,300-5,000 PF
- H - 850- 1,300 PF

### CONTACT TYPE

P-pin; S-socket (Consult factory for availability of sockets)

### ALTERNATE SHELL POSITION

N (normal), A, B, C, D

### SPECIAL MODIFIERS

Consult factory for definition and availability

# MIL-C-38999 Series I, II, III, IV Filter Connectors

## Performance and Material Specifications

### MATERIALS AND FINISHES

Shell	Aluminum alloy*
Insulator	High grade plastic/epoxy
Contacts	Copper alloy, gold plate
Grommet and Seal	Silicone base elastomer
Jam Nut	Aluminum alloy*
Grounding Spring	Beryllium copper, silver plate

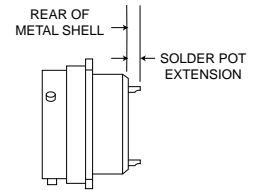
\*Finish as noted in How to Order section.

### ELECTRICAL (Size #16, #20 and #22)

Filter Description	Low Freq.	Mid Freq.	Std. Freq.	High Freq.
Catalog Indicator	L	M	T	H
Voltage Rating	200 VDC - 120 VAC rms 400 Hz			
Current Rating (amp DC)	15 amp - size 16/7.5 amp - size 20/5.0 amp, size 22			
Insulation Resistance, 2 min. electrification time max. at 25°C	5,000 megohms min. @ 100 VDC			
DWV, sea level, with 500 microamps max. charge/discharge	300 VDC size 22		500 VDC	
	500 VDC size 16 & 20			
Capacitance at 1 KHz, 0.1 V rms Picofarads	32,000	8,000	3300	850
	45,000	12,000	5000	1,300
	Freq. MHz			
	0.1	2 min.	-	-
	1	10 min.	2 min.	-
	2	16 min.	7 min.	2 min.
	10	40 min.	18 min.	8 min.
	100	60 min.	55 min.	45 min.
	500 to 1000	70 min.	60 min.	55 min.
				50 min.
Filter Type/Construction	Pi	Pi	Pi	Pi

Consult factory for higher or mixed attenuation values and higher voltage ratings.

## Contact Extension - All Connectors

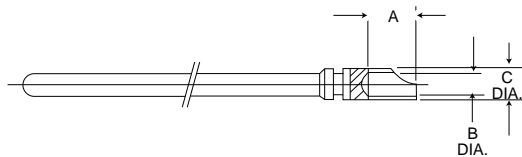


Note: Solder pot extension typically will be .200 (5.08) max. beyond shell rear.

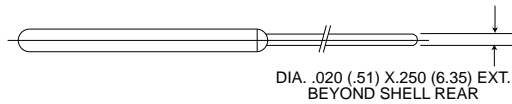
## Contact - Pin and Sockets

### Standard Contact Terminations

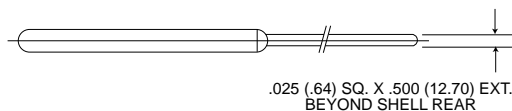
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



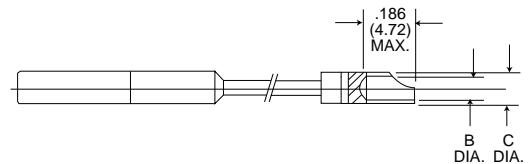
Pin/Solder Pot



Pin/Printed Circuit



Pin/Wire Wrap



Socket/Solder Pot

Contact Size	A	B Dia.	C Dia.
#22	.115 (2.92)	.039 (0.97)	.056 (1.42)
	.095 (2.41)	.035 (0.89)	.051 (1.30)
#20	.125 (3.18)	.047 (1.19)	.066 (1.68)
	.110 (2.79)	.042 (1.07)	.061 (1.55)
#16	.170 (4.32)	.077 (1.96)	.104 (2.64)
	.150 (3.81)	.068 (1.73)	.097 (2.46)

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## Contact Arrangements

Engaging view, pin insert

Series I, III & IV	9-35	11-5	11-98	11-35	13-8	13-98	13-35
Series II	8-35	10-5	10-98	10-35	12-8	12-98	12-35
No. of Contacts	6 #22D	5 #20	6 #20	13 #22D	8 #20	10 #20	22 #22D
Service Ratings	M	I	I	M	I	I	M

Series I, III & IV	15-5	15-18	15-19	15-35	-	17-8	17-26	17-35
Series II	14-5	14-18	14-19	14-35	16-99	16-8	16-26	16-35
No. of Contacts	5 #16	18 #20	19 #20	37 #22D	21 #20, 2 #16	8 #16	26 #20	55 #22D
Service Ratings	II	I	I	M	I	II	I	M

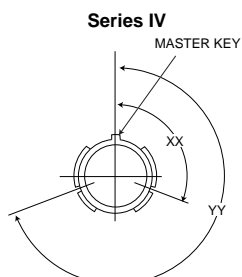
Series I, III & IV	19-32	19-35	21-16	21-35	21-41
Series II	18-32	18-35	20-16	20-35	20-41
No. of Contacts	32 #20	66 #22D	16 #16	79 #22D	41-#20
Service Ratings	I	M	II	M	I

Series I, III & IV	23-21	23-35	23-53	23-55
Series II	22-21	22-35	22-53	22-55
No. of Contacts	21 #16	100 #22D	53 #20	55 #20
Service Ratings	II	M	I	I

Series I, III & IV	25-29	25-35	25-61
Series II	24-29	24-35	24-61
No. of Contacts	29 #16	128 #22D	61 #20
Service Ratings	I	M	I

Please consult factory for availability of layouts not shown.

## Polarizign Positions



Front face of receptacle shown. Polarizing keys are external.

Key Arrangements	XX	YY
N	110°	250°
A	100°	260°
B	90°	270°
C	80°	280°
D	70°	290°

See page 131 for Series I, II and III polarization.