



PRODUCTS

CIN::APSE
MICROMINIATURE
D-SUB

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FILTER D TECHNICAL DATA

Termination options	Solder bucket, flow solder, Straight & 90°, Mini wrap.				
Number of contacts	9	15	25	27	50
Maximum insertion and extraction force	30	50	83	123	167N
Performance level	1, 2 & 3				
Wire accommodation	≤ 0.5mm (20AWG)				
Plug contact material	Copper alloy				
Socket contact material	Copper alloy				
Current rating	5A				
Capacitance	330pF Tol +50%-20%, 1000pF and 2000pF Tol +80%-20%				
Working voltage	200V d.c. or a.c. peak				
Contact resistance	5 X 10 ⁻³ ohm max.				
Insulation resistance	≥ 5 X 10 ⁹ ohm				
Temperature range	-25°C to +85°C				
Insulator materials	High impact Epoxy & GF Polyester UL94V-0 rated				
Shell materials	Front: Steel-Bright tin finish with grounding indents on plugs Rear: Electrolytic Nickel				

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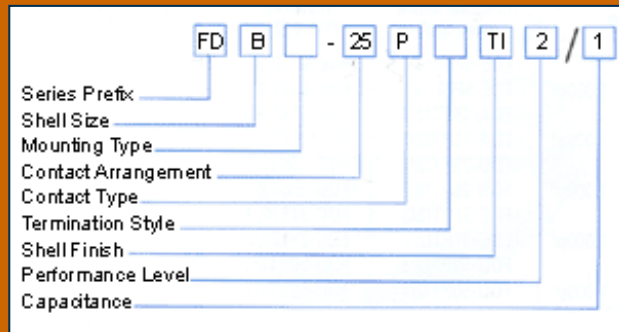
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FILTER D PART NUMBERING



Series Prefix	FD	Filtered D (Standard Prefix)
Shell Size	E,A,B,C, or D (All standard)	
Mounting Type	B	4-40 rivnut for rear panel mounting (Standard)
	P	M3 rivnut for rear panel mounting
	D	With female screw locks fitted
	E	4-40 clinch-nut for rear panel mounting with locking feature for high vibration applications
	Y	Universal float mount
	No designation	Ø3.05mm mounting hole (Standard) 90° Flow Solder versions are not available with float mounts
Contact Arrangement	9, 15, 25, 37, or 50 (All standard)	
Contact Type	P or S (Both Standard)	
Termination Style	90° Flow Solder	
European Footprint	1A0N	Without brackets
	1A2N	With plastic brackets and keeper moulding*
	1AEN	With earthing straps on plastic brackets (Standard) with keeper moulding*
	1ASN	With board locks, earthing straps, plastic (Standard) brackets and keeper moulding*
	* Please specify rivnuts or screw locks, mounting types B, P, or D (rivnuts Standard)	
Straight Flow Solder	OL2	Termination 0.6mm, 5.3mm long.
	BL2	As OL2 with vertical Board locks 4/40 threads.
Solder Bucket No designation required (Standard)		
Shell Finish	T	Bright tin (Standard)
		Bright tin with grounding indents (plug only)
	TI	Nickel on rear shell (Standard)
Performance Level	1	Exceeds Din Class 2
	2	Din Class 2 (Standard)
	3	Exceed DIN Class 3



Capacitance	1	1000pF
	2	2000pF
	3	330pF

Custom of selectively loaded products available.
Consult sales or office

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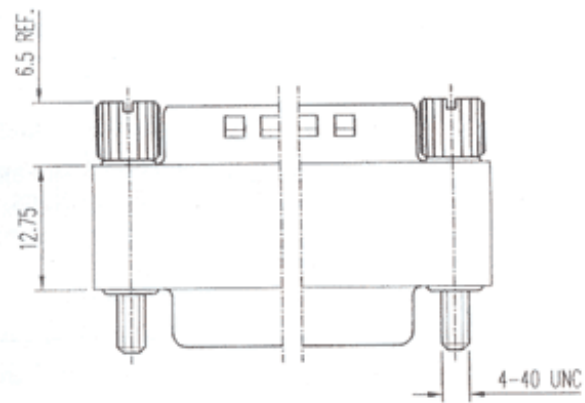
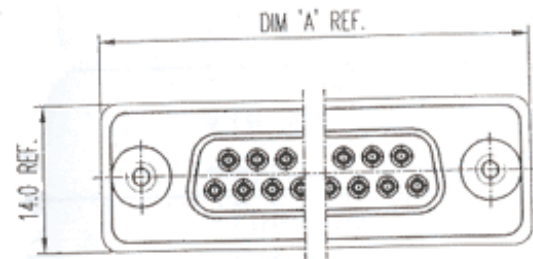
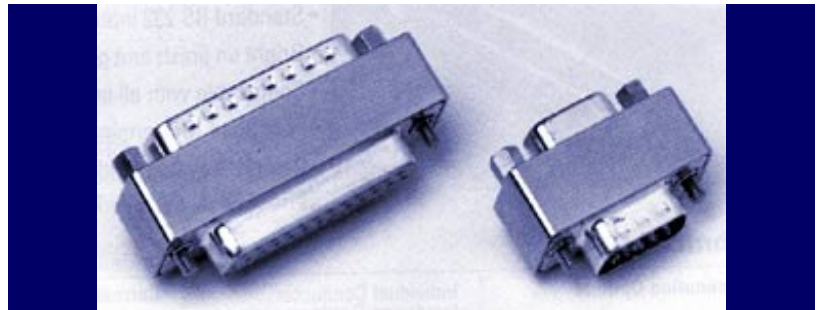
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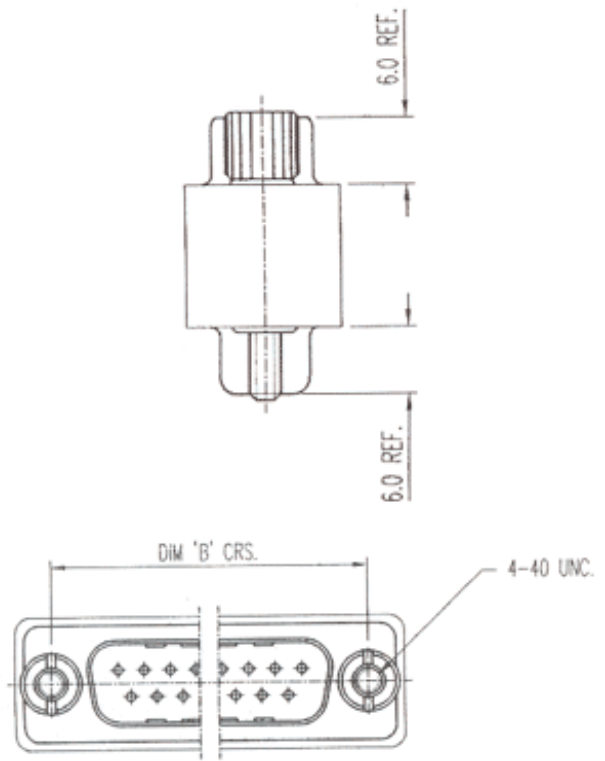
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FILTER D FILTER ADAPTOR

Male / Female Filtering Adapter





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FILTER D

TECHNICAL INFORMATION

Part Number	Working Voltage	Proof Voltage	Capacitance To Ground	Capacitance Tolerance	Temperature Range	DIM "A" REF.	DIM "B" REF.
FA9 PS/1	200V *	500V	1000pF	+80% - 20%	-25°C to +85°C	32.7	24.99
FA9PS/3			330pF	+50% - 20%			
FA15 PS/1	200V *	500V	1000pF	+80% - 20%	-25°C to +85°C	41.0	33.32
FA15 PS/3			330pF	+50% - 20%			
FA25 PS/1	200V *	500V	1000pF	+80% - 20%	-25°C to +85°C	54.9	47.04
FA25 PS/3			330pF	+50% - 20%			
FA37 PS/1	200V *	500V	1000pF	+80% - 20%	-25°C to +85°C	71.2	63.50
FA37 PS/3			330pF	+50% - 20%			

*DC or AC PEAK

GENERAL SPECIFICATION - MECHANICAL, ELECTRICAL & ENVIRONMENTAL PERFORMANCE IN LINE WITH REQUIREMENTS OF DIN CLASS 2

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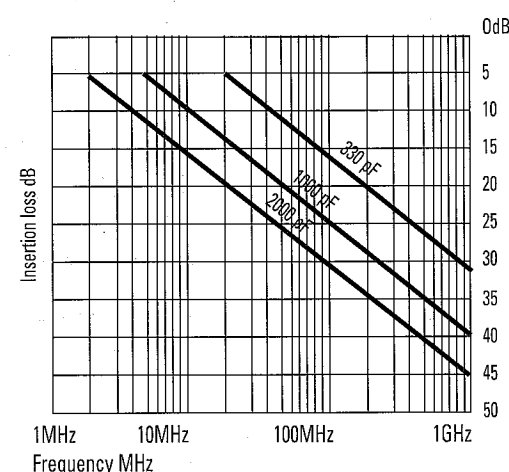
Edition 11/98

FILTER D CONNECTORS

CINCH has been producing filter connectors for years and has acquired an in depth knowledge of EMC protection. CINCH offers fast delivery on a wide range of standard filtered connectors and will be your partner to design the product you need to meet European and FCC regulations.

Features

- The Cinch Filter D Sub is a high quality turned pin contact connector.
- Tubular capacitors are individually inserted on each contact.
- The encapsulation of capacitors is made with epoxy for maximum resistance to hazardous environments.
- Cinch filter D Sub have the same size and footprint as standard D Sub connectors.
- Meets the relevant dimensional requirements of CECC 73301- 802, MIL-C 24308, DIN 41652, BS 9523 F0013, BT 217, HE501.
- Bright tin or nickel finish with grounding indent for EMI/RFI shielding.



Typical performance relates to 50 Ω system
Mil -Std. - measured at 1 KHz 0.1 rms

1-1000 pF
2-2000 pF
3-330 pF

Technical Data

Termination options	Solder bucket, Flow solder, Straight & 90°, Mini wrap.				
Number of contacts	9	15	25	27	50
Maximum insertion and extraction force	30	50	83	123	167N
Performance level	1,2 & 3				
Wire accommodation	$\leq 0,5 \text{ mm}^2$ (20 AWG)				
Plug contact material	Copper alloy				
Socket contact material	Copper alloy				

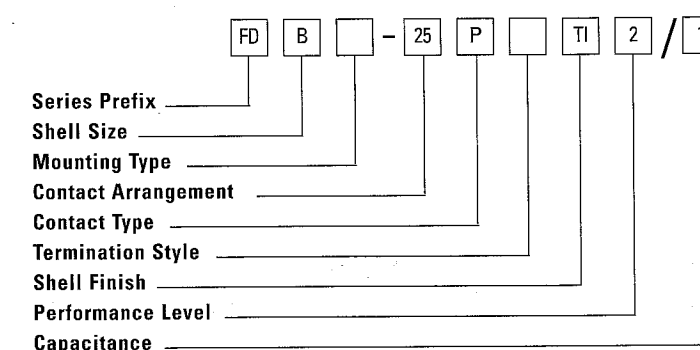
Current rating	5A
Capacitance	330 pF Tol + 50% - 20%, 1000 pF and 2000pF Tol + 80% - 20%
Working voltage	200 V d.c. or a.c. peak
Contact resistance	$5 \times 10^{-3} \Omega$ max
Insulation resistance	$\geq 5 \times 10^9 \Omega$
Temperature range	- 40° to + 125°C
Insulator materials	High impact Epoxy & GF Polyester UL94V-0 rated
Shell materials	Front: Steel-Bright tin finish with grounding indents on plugs Rear: Electrolytic Nickel

FILTER D CONNECTORS

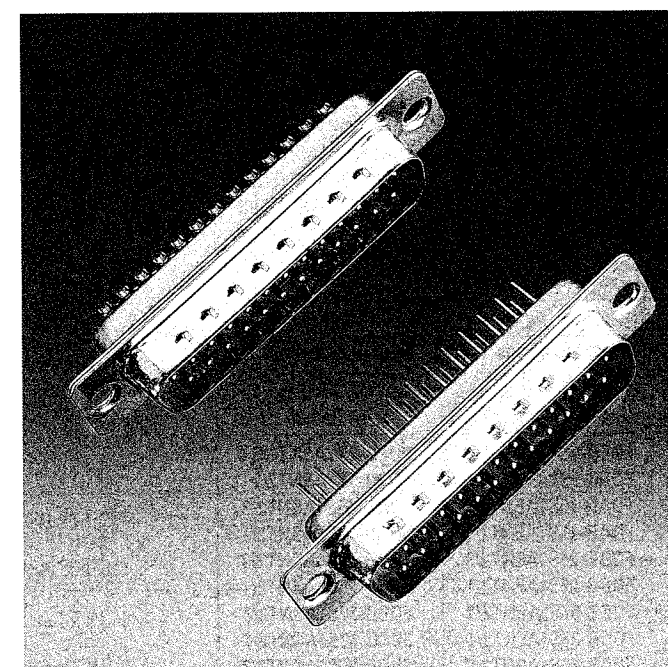


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Part Numbering



Series Prefix	FD	- Filtered D (Standard Prefix)
Shell Size	E, A, B, C or D	(All Standard)
Mounting Type	B	- 4-40 rivnut for rear panel mounting (Standard)
	P	- M3 rivnut for rear panel mounting
	D	- With female screw locks fitted
	E	- 4-40 clinch-nut for rear panel mounting with locking feature for high vibration applications
	F	- Float mount for rear panel mounting
	Y	- Universal float mount
No designation		- $\varnothing 3.05 \text{ mm}$ mounting hole (Standard)
		90° Flow Solder versions are not available with float mounts
Contact Arrangement	9, 15, 25, 37 or 50	(All Standard)
Contact Type	P or S	(Both Standard)
Termination Style		
90° Flow Solder		
European Footprint	1A0N	- Without brackets (Standard)
	1A2N	- With plastic brackets and keeper moulding
	1AEN	- With earthing straps on plastic brackets (Standard) with keeper moulding*
	1ASN	- With board locks, earthing straps, plastic (Standard) bracket and keeper moulding*
		*Please specify rivnuts or screw locks, mounting types B, P, or D (rivnuts Standard)
Straight Flow Solder	OL2	- Termination 0.6 mm, 5.3 mm long (Standard)
	BL2	- As OL2 with vertical Boardlocks 4/40 threads
	F179A	- 0.61 mm square section pins for up to 3 wrap.
Solder Bucket	No designation	required (Standard)
Shell Finish	T	- Bright tin (Standard)
	TI	- Bright tin with grounding indents (plugs only)
		- Nickel on rear shell
(Standard)		
Performance Level	1	- Exceeds Din Class 2
	2	- Din Class 2 (Standard)
	3	- Exceeds DIN Class 3
Capacitance	1	- 1000 pF
	2	- 2000 pF
	3	- 330 pF
		Custom or selectively loaded products available. Consult sales office.





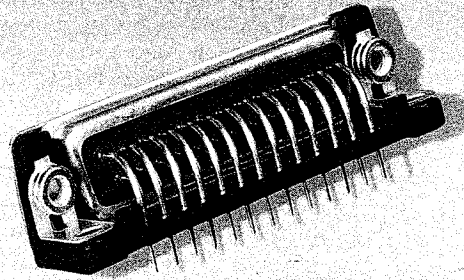
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Solder Bucket

Number of Contacts	Performance Level	Capacitance Value		Plug	Socket
				Tin/Nickel Indent Plated Shell	Tin/Nickel Plated Shell
9	2	330pf	1,000pf	FDE-9PTI2/3	FDE-9ST2/3
15	2	330pf	1,000pf	FDE-9PTI2/1	FDE-9ST2/1
25	2	330pf	1,000pf	FDA-15PTI2/3	FDA-15ST2/3
37	2	330pf	1,000pf	FDA-15PTI2/1	FDA-15ST2/1
50	2	330pf	1,000pf	FDB-25PTI2/3	FDB-25ST2/3
	2	330pf	1,000pf	FDB-25PTI2/1	FDB-25ST2/1
	2	330pf	1,000pf	FDC-37PTI2/3	FDC-37ST2/3
	2	330pf	1,000pf	FDC-37PTI2/1	FDC-37ST2/1
	2	330pf	1,000pf	FDD-50PTI2/3	FDD-50ST2/3
	2	330pf	1,000pf	FDD-50PTI2/1	FDD-50ST2/1



Straight PCB Mount

Number of Contacts	Performance Level	Capacitance Value		Plug	Vertical Boardlock	Socket	Vertical Boardlock
				Tin/Nickel Indent Plated Shell	Tin/Nickel Plated Shell	Tin/Nickel Plated Shell	Tin/Nickel Plated Shell
9	2	330pf	1,000pf	FDE-9POL2TI2/3	FDE-9PBL2TI2/3	FDE-9SOL2T2/3	FDE-9SBL2T2/3
15	2	330pf	1,000pf	FDE-9POL2TI2/1	FDE-9PBL2TI2/1	FDE-9SOL2T2/1	FDE-9SBL2T2/1
25	2	330pf	1,000pf	FDA-15POL2TI2/3	FDA-15PBL2TI2/3	FDA-15SOL2T2/3	FDA-15SBL2T2/3
37	2	330pf	1,000pf	FDA-15POL2TI2/1	FDA-15PBL2TI2/1	FDA-15SOL2T2/1	FDA-15SBL2T2/1
50	2	330pf	1,000pf	FDB-25POL2TI2/3	FDB-25PBL2TI2/3	FDB-25SOL2T2/3	FDB-25SBL2T2/3
	2	330pf	1,000pf	FDB-25POL2TI2/1	FDB-25PBL2TI2/1	FDB-25SOL2T2/1	FDB-25SBL2T2/1
	2	330pf	1,000pf	FDC-37POL2TI2/3	FDC-37PBL2TI2/3	FDC-37SOL2T2/3	FDC-37SBL2T2/3
	2	330pf	1,000pf	FDC-37POL2TI2/1	FDC-37PBL2TI2/1	FDC-37SOL2T2/1	FDC-37SBL2T2/1
	2	330pf	1,000pf	FDD-50POL2TI2/3	FDD-50PBL2TI2/3	FDD-50SOL2T2/3	FDD-50SBL2T2/3
	2	330pf	1,000pf	FDD-50POL2TI2/1	FDD-50PBL2TI2/1	FDD-50SOL2T2/1	FDD-50SBL2T2/1

90° PCB – Plug

Number of Contacts	Performance Level	Capacitance Value		Open Frame	Earthing Straps	Snap In Boardlock
				Tin/Nickel Indent Plated Shell	Tin Indent Shell 4-40 Rivnut	Tin Indent Shell 4-40 Rivnut
9	2	330pf	1,000pf	FDE-9P1AONTI2/3	FDEB-9P1AENTI2/3	FDEB-9P1ASNTI2/3
15	2	330pf	1,000pf	FDE-9P1AONTI2/1	FDEB-9P1AENTI2/1	FDEB-9P1ASNTI2/1
25	2	330pf	1,000pf	FDA-15P1AONTI2/3	FDAB-15P1AENTI2/3	FDAB-15P1ASNTI2/3
37	2	330pf	1,000pf	FDA-15P1AONTI2/1	FDAB-15P1AENTI2/1	FDAB-15P1ASNTI2/1
50	2	330pf	1,000pf	FDB-25P1AONTI2/3	FDBB-25P1AENTI2/3	FDBB-25P1ASNTI2/3
	2	330pf	1,000pf	FDB-25P1AONTI2/1	FDBB-25P1AENTI2/1	FDBB-25P1ASNTI2/1
	2	330pf	1,000pf	FDC-37P1AONTI2/3	FDCB-37P1AENTI2/3	FDCB-37P1ASNTI2/3
	2	330pf	1,000pf	FDC-37P1AONTI2/1	FDCB-37P1AENTI2/1	FDCB-37P1ASNTI2/1
	2	330pf	1,000pf	FDD-50P1AONTI2/3	FDDB-50P1AENTI2/3	FDDB-50P1ASNTI2/3
	2	330pf	1,000pf	FDD-50P1AONTI2/1	FDDB-50P1AENTI2/1	FDDB-50P1ASNTI2/1

90° PCB – Socket

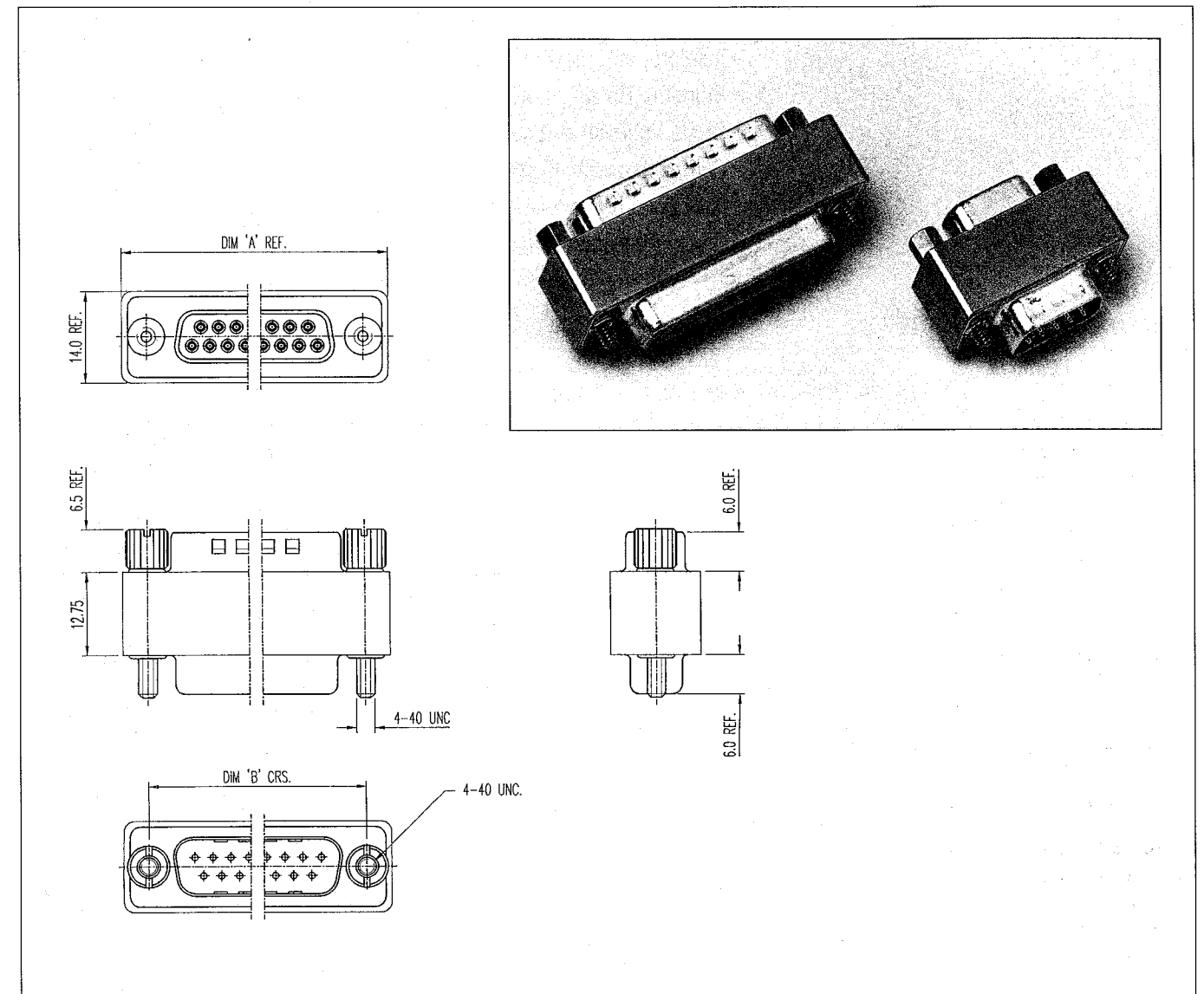
Number of Contacts	Performance Level	Capacitance Value		Open Frame	Earthing Straps	Snap In Boardlock
				Tin/Nickel Plated Shell	Tin Shell 4-40 Rivnut	Tin Shell 4-40 Rivnut
9	2	330pf	1,000pf	FDE-9S1AONT2/3	FDEB-9S1AENT2/3	FDEB-9S1ASNT2/3
15	2	330pf	1,000pf	FDE-9S1AONT2/1	FDEB-9S1AENT2/1	FDEB-9S1ASNT2/1
25	2	330pf	1,000pf	FDA-15S1AONT2/3	FDAB-15S1AENT2/3	FDAB-15S1ASNT2/3
37	2	330pf	1,000pf	FDA-15S1AONT2/1	FDAB-15S1AENT2/1	FDAB-15S1ASNT2/1
50	2	330pf	1,000pf	FDB-25S1AONT2/3	FDBB-25S1AENT2/3	FDBB-25S1ASNT2/3
	2	330pf	1,000pf	FDB-25S1AONT2/1	FDBB-25S1AENT2/1	FDBB-25S1ASNT2/1
	2	330pf	1,000pf	FDC-37S1AONT2/3	FDCB-37S1AENT2/3	FDCB-37S1ASNT2/3
	2	330pf	1,000pf	FDC-37S1AONT2/1	FDCB-37S1AENT2/1	FDCB-37S1ASNT2/1
	2	330pf	1,000pf	FDD-50S1AONT2/3	FDDB-50S1AENT2/3	FDDB-50S1ASNT2/3
	2	330pf	1,000pf	FDD-50S1AONT2/1	FDDB-50S1AENT2/1	FDDB-50S1ASNT2/1

FILTER ADAPTOR



Edition 11/98

Male / Female Filtering Adaptor



Technical, Part Numbering Information

	Working Voltage	Proof Voltage	Capacitance To Ground	Capacitance Tolerance	Temperature Range	DIM "A" REF.	DIM "B" REF.
FA 9 PS/1	200V DC OR AC PEAK	500V	1000 pF	+80% – 20%	– 40° +125°C	32.7	24.99
FA 9 PS/3			330 pF	+50% – 20%			
FA 15 PS/1	200V DC OR AC PEAK	500V	1000 pF	+80% – 20%	– 40° +125°C	41.0	33.32
FA 15 PS/3			330 pF	+50% – 20%			
FA 25 PS/1	200V DC OR AC PEAK	500V	1000 pF	+80% – 20%	– 40° +125°C	54.9	47.04
FA 25 PS/3			330 pF	+50% – 20%			
FA 37 PS/1	200V DC OR AC PEAK	500V	1000 pF	+80% – 20%	– 40° +125°C	71.2	63.50
FA 37 PS/3			330 pF	+50% – 20%			

GENERAL SPECIFICATION – MECHANICAL, ELECTRICAL & ENVIROMENTAL PERFORMANCE IN LINE WITH REQUIREMENTS OF DIN CLASS 2