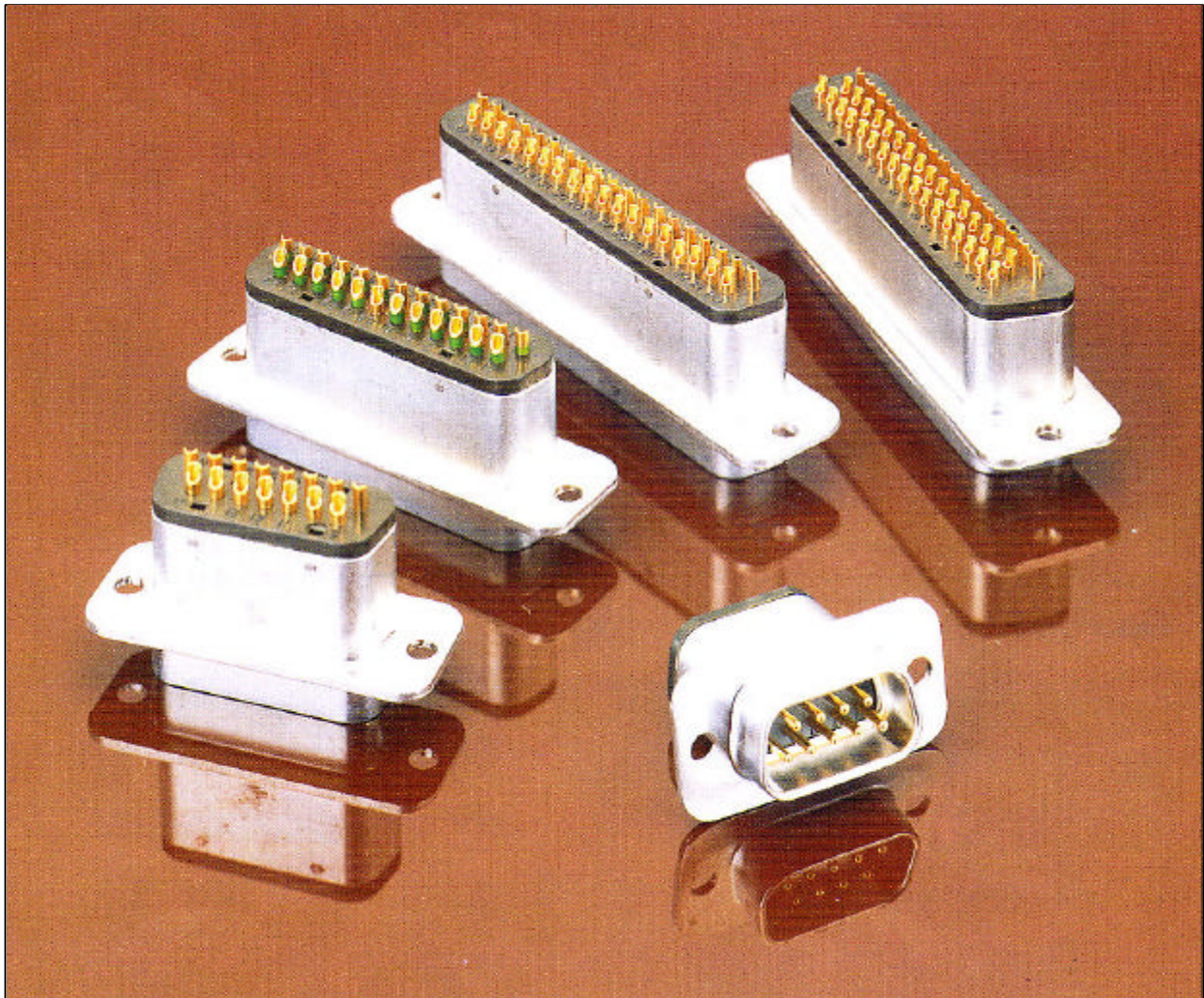


Amphenol

481 Series

Rack and Panel Environmental Connectors



Description

The 481 Series is a Filter connector plug with either pintail or solder bucket type fixed pin contacts. These are designed to meet the mechanical and environmental requirements of MIL-C-24308. These connectors are available with filter, power grounding contacts and EMI sealing plugs or any combination thereof.

Mating Connector Information

481 Series mate with all connectors conforming to MS 18269 and MS 18270 of MIL-C-24308 and Amphenol MIN-RAC 17® Series miniature connectors.

Introduction

AMPHENOL's Filter connectors are a system of reliability engineered receptacles, plugs, contacts and accessories, designed to provide a wide range of performance and servicing features not previously available with ordinary EMI filtering connectors.

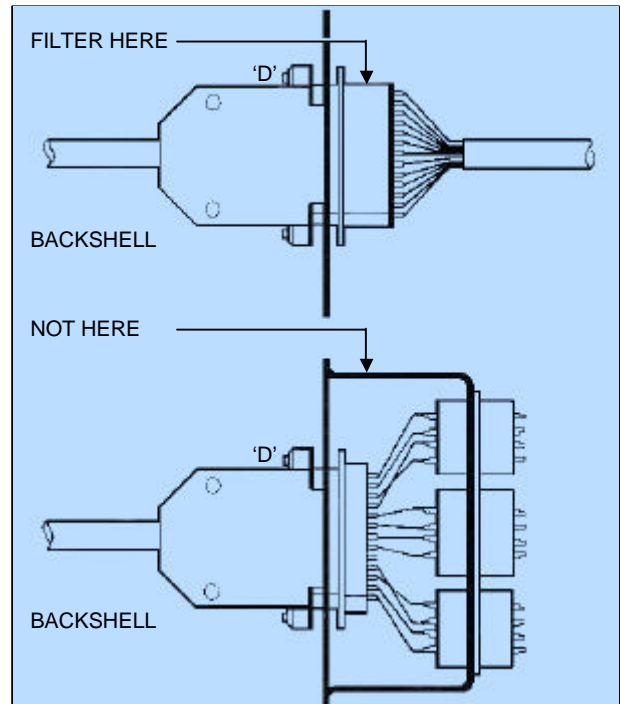
These connectors are rugged enough to operate reliably under high physical stress, and in the demanding environmental conditions required of power connections.

The patented stress isolated EMI filter is composed of a ceramic element attached to a sturdy contact in a way that dampens all connector stresses and virtually eliminates the chance of ceramic fracture due to vibration, thermal and physical shock.

Once inserted in the connector, the filter contact is engaged by a Microstrip grounding plate designed to achieve maximum insertion loss and to inhibit resonances due to series inductance.

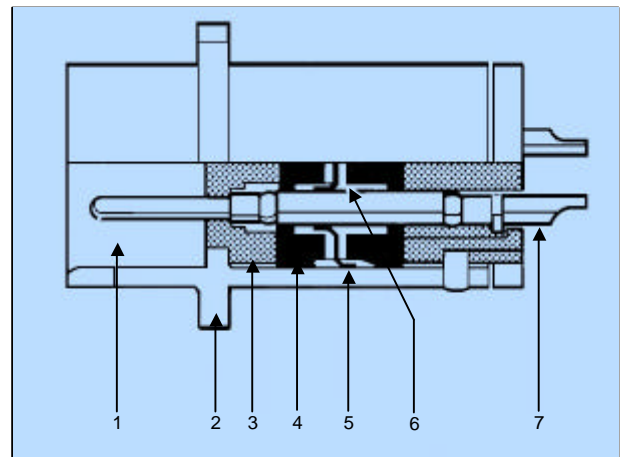
The use of filter connectors has the following advantages:

- Space saving
- Weight saving
- Reduction in solder connections
- Eliminates requirement for RFI screened box
- Provides low impedance ground plane for filter network

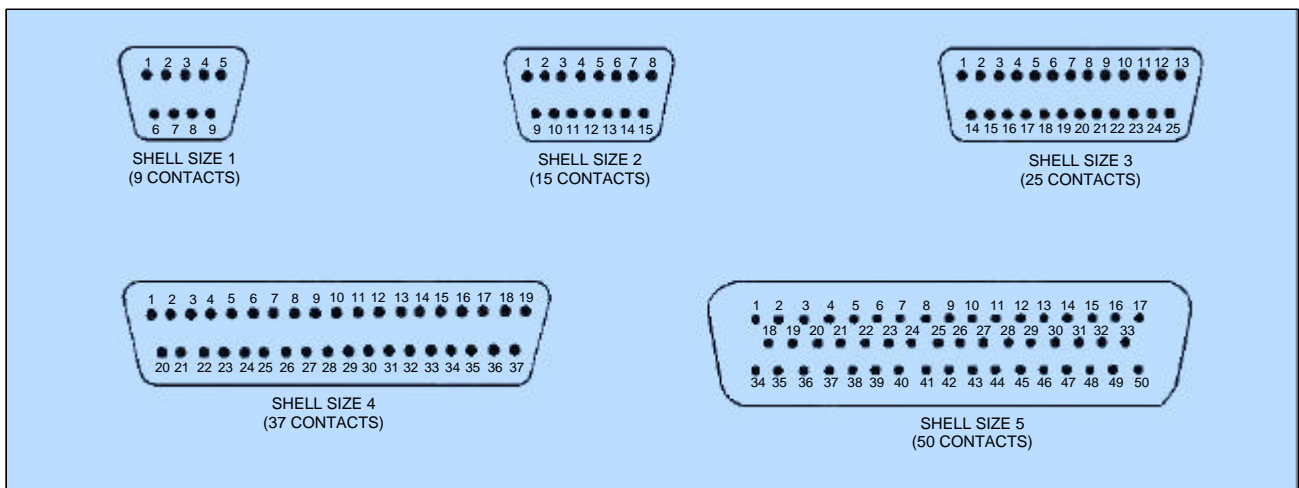


Design Features

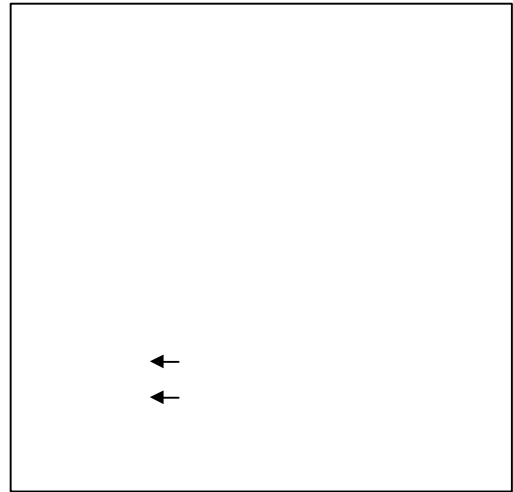
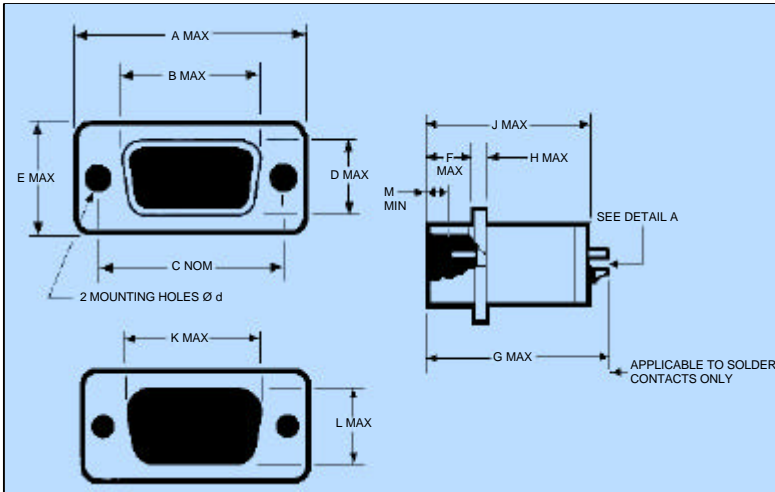
1. One piece aluminium alloy shell with clear chromate finish over cadmium plate. Shell with increased flange width for improved shielding.
2. One panel cut-out for front and rear mounting.
3. Thermoset Inserts.
4. High temperature silicone rubber moisture seal.
5. Microstrip EMI grounding plate – plated copper alloy.
6. High temperature contact heat dissipator plate.
7. Stress isolated filter contact.



Insert Arrangements



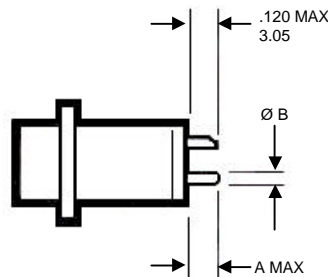
Dimensions



SHELL SIZE	A	B	C	D	E	F	G	H	J	K	L	M	d
1	1.226	.750	.984							.728			
	31.14	19.05	24.99							18.49			
2	1.552	1.072	1.312							1.048			
	39.42	27.23	33.32							26.62			
3	2.097	1.612	1.852	.400	.602	.236	.960	.057	.840	1.589	.415	.063/.035	.125/.115
	53.26	40.94	47.04	10.16	15.29	5.99	24.38	1.45	21.34	40.36	10.54	1.60/0.89	3.18/2.92
4	2.742	2.254	2.500							2.236			
	69.65	57.25	63.50							56.79			
5	2.650	2.162	2.406	.514	.717					2.135	.534		
	67.31	54.91	61.11	13.05	18.21					54.23	13.56		

DIMENSIONS SHOWN OVER BLUE BACKGROUND ARE IN MILLIMETRES

Availability of Terminations

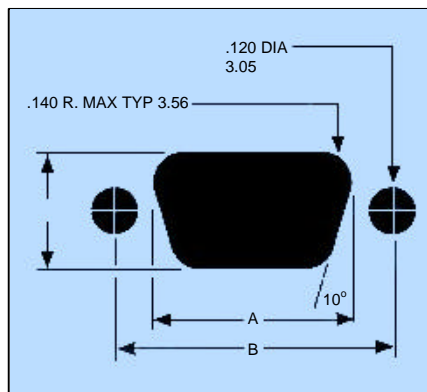


CONTACT PART NUMBER	DIM A	DIA B
481-57		
481-59		
481-65		
481-66	.140	.030 0.76
481-68	3.56	.028 0.71
481-92		
481-67		
481-61	.352 8.94	
481-63	.245 6.22	

Assembly may comprise of connector fitted with all pintail or all solder bucket terminations, or a combination of both. Pintails may be obtained in different diameters, shapes and lengths to meet users' special requirements. Consult factory for further information


Installation

RECOMMENDED PANEL CUT OUTS (Front and Back Mounting)



SHELL SIZE	A DIM MIN	B	C
		+ .000 - .006 -0.15	+ .032 - .000 +0.81
1	0.790	0.987	0.440
	20.07	25.07	11.18
2	1.110	1.315	0.440
	28.19	33.40	11.18
3	1.650	1.855	0.440
	41.91	47.12	11.18
4	2.300	2.502	0.440
	58.42	63.55	11.18
5	2.215	2.410	0.554
	56.26	61.21	14.07

Contact Specifications (Typical Contacts)

CONTACT TYPE		FILTER					POWER
Contact Part Number	Pintail Termination (See Page 3)	481-92	481-63 481-57	481-65	481-67	481-61 481-66	481-68
	Solder Bucket Termination	481-55	481-8	481-26	481-15	481-16	481-20
Circuit Type		P1	P1	C	LRC	CLR	NA
Pass Band dc to 3dB cut off Frequency Fca =		15MHz	4.5MHz	200KHz			NA
Capacitance (Picofarads) @25°C - minimum at 1 KHz	(-0) (+100%)	500	1750	50000			NA
Working Voltage Sea Level (50mA max. charging current)	at 85°C	dc	200	200	100		500
		ac (rms)	125	125	50		300
	at 125°C	dc	150	150	100		500
		ac (rms)	125	125	50		300
Dielectric Withstanding Voltage (dc) @ 25°C (50mA max. charging current)		500	500	300			1000
Insulation Resistance (gigahoms) -25°C - Minimum		5	5	10			
Current Rating (amperes) - maximum ** dc and low frequencies		3	3				7.5
Filter rf Current (amperes) - minimum ** at any frequency		0.25					NA
Operating Temperature ** (°C)		-55 to +150					
Insertion Loss (decibels) @ 25°C - minimum per MIL STD-220 (No Load) at (Performance in Mated Connectors) For Typical Insertion Loss See below (results will vary with temp. source and load impedance)	0.1 MHz	-	-	-	Same performance as for 'C' version under Mil-Std-220 but improved filter- filtering offered for other Zs & Z1 values		NA
	1 MHz	-	-	15			
	10 MHz	-	5	33			
	100 MHz	20	40	45			
	1000MHz	35	55	50			
Crosstalk Attenuation (decibels) (coupling between contacts) - minimum at 100MHz	Power to Filter	30					
	Filter to Filter	60					

* Consult AMPHENOL FACTORY if your filter needs are not reflected in this catalogue.

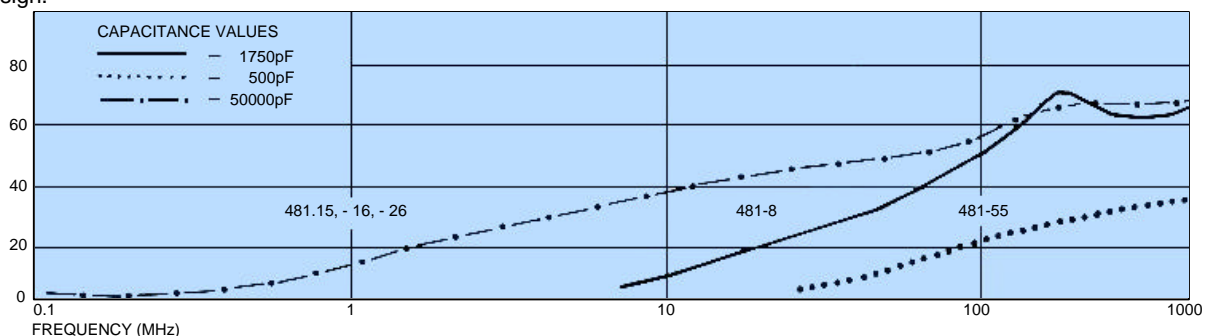
** Upper limit is the maximum allowable internal hot spot temperature resulting from any combination of electrical and load ambient.

Typical Insertion Loss

Tests performed in strict accordance with MIL-STD-220* (No-Load) on Contacts in a 481 Series connector mated with a Standard Non-Filter connector.

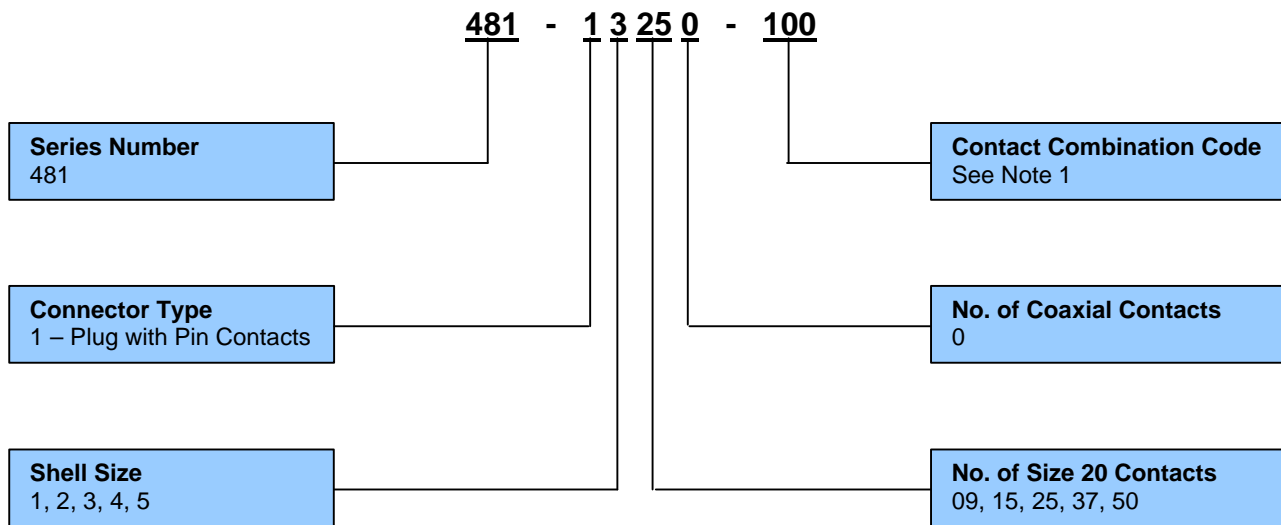
CAUTION – Comparison with other filter connector manufacturers data may be misleading unless the following factors are taken into account:

- (1) is official (unmodified) MIL-STD-220 test method utilised as basis for performance depicted? Modification will result in an apparent (fictitious) higher response!
- (2) is performance shown for filter contacts installed in connectors? If performance is based on discrete (single) contacts tested to MIL-STD-220, higher levels of I.L. will be indicated due to grounding limitations inherent in any connector design.



481 Series

Ordering Information by Amphenol Part Number



Contact Combination Codes

Note 1 –

Customer may select any combination of filter, power, grounding contacts or EMI sealing plugs. Contact Combination Code will be reflected by the last three digits in the above part number and will be assigned by the factory.

Part Number

	Solder Bucket	Pintail
Filter Contact	See Page 4	
Power Contact	481-20	481-68
Grounding Contact	481-25	481-59
EMI Sealing Plug	481-24	

Standard Contact Combination Codes	
- XXX	
- 100	Contains only 481-8 Filter Contacts
- 200	Contains only 481-15 Filter Contacts
- 300	Contains only 481-16 Filter Contacts
- 400	Contains only 481-26 Filter Contacts
- 500	Contains only 481-55 Filter Contacts

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