

RFI/EMI/EMC FILTERS

RFI SPECIALTY COMPONENTS PROGRAMS

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EMS

Ultra
ELECTRONICS

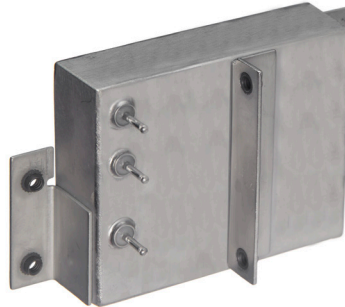
RECTANGULAR FILTERS

The RFI SPECIALTY COMPONENTS program from EMS has the capability of designing and manufacturing EMI/RFI filters in virtually any shape and size. Most filters in this “Rectangular” category are the result of an open exchange of technical details between EMS and the end-user. While rectangular-shaped packaging is the more common, we accept the challenge to accommodate an application’s unique requirements for size, weight, shape, termination, or mounting without compromising performance.

Popular applications include power and signal filtering for defense and aerospace equipment, for radar, for communication, for shielded and secure rooms, and others.

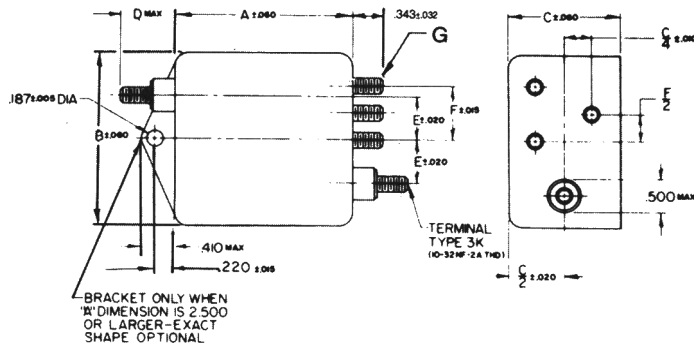
Information about FILTRON Powerline shielded room filters is available by contacting the factory or your local representative.

For applications that may involve Transient Voltages or Electro-Magnetic Pulse (EMP) technical information that is specific to these applications are also available.



EMS

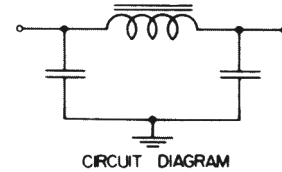
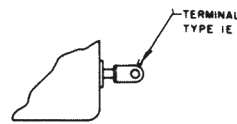
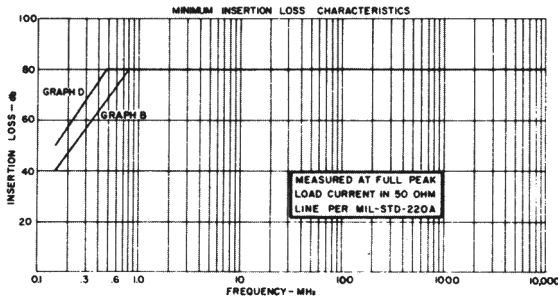
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RECTANGULAR FILTERS

FOR FEED-THRU MOUNTING

100 VDC, 125 VAC/400 VDC 250 VAC/600 VDC



RFI PART NO.	RATING	A	B	DIMENSIONS					F	G	INSERTION LOSS GRAPH	TERMINAL TYPE
RF 3289-1	1A 100 VDC	1.750	1.250	.875	.620	.281	.312	6-32	D	1E		
RF 3289-2	3A 100 VDC	1.750	1.250	1.000	.620	.281	.312	6-32	D	1E		
RF 3289-3	5A 100 VDC	1.750	1.250	1.125	.620	.281	.562	6-32	D	1E		
RF 3289-4	5A 100 VDC	2.000	2.000	1.000	.880	.500	.562	6-32	D	1E		
RF 3289-5	10A 100 VDC	2.000	2.000	1.125	.880	.500	.562	6-32	D	3K		
RF 3289-6	15A 100 VDC	2.000	2.000	1.250	.880	.500	.562	6-32	D	3K		
RF 3289-7	30A 100 VDC	2.000	2.000	1.500	.880	.500	.562	6-32	B	3K		
RF 3289-8A	30A 100 VDC	2.500	2.000	1.750	.880	.500	.562	8-32	D	3K		
RF 3289-9A	55A 100 VDC	2.875	2.250	1.562	.880	.500	.562	8-32	B	3K		
RF 3289-10A	55A 100 VDC	2.875	2.250	1.875	.880	.500	.562	8-32	D	3K		

RFI PART NO.	RATING	A	B	DIMENSIONS					F	G	INSERTION LOSS GRAPH	TERMINAL TYPE
RF 3290-1	1A 125 VAC 0-400 Hz 400 VDC	1.750	1.250	.875	.620	.281	.312	6-32	D	1E		
RF 3290-2	3A 125 VAC 0-400 Hz 400 VDC	2.000	2.000	.875	.880	.500	.562	6-32	D	1E		
RF 3290-3	5A 125 VAC 0-400 Hz 400 VDC	2.000	2.000	1.125	.880	.500	.562	6-32	D	1E		
RF 3290-4	10A 125 VAC 0-400 Hz 400 VDC	2.000	2.000	1.500	.880	.500	.562	6-32	D	3K		
RF 3290-5	15A 125 VAC 0-400 Hz 400 VDC	2.500	2.000	1.500	.880	.500	.562	8-32	B	3K		
RF 3290-6	15A 125 VAC 0-400 Hz 400 VDC	2.500	2.000	1.750	.880	.500	.562	8-32	D	3K		
RF 3290-7	30A 125 VAC 0-400 Hz 400 VDC	2.500	2.000	2.125	.880	.500	.562	10-32	B	3K		
RF 3290-8	30A 125 VAC 0-400 Hz 400 VDC	3.250	2.250	2.125	.880	.500	.562	10-32	D	3K		
RF 3290-9	55A 125 VAC 0-400 Hz 400 VDC	3.188	2.250	2.125	.880	.500	.562	10-32	B	3K		
RF 3290-10	55A 125 VAC 0-400 Hz 400 VDC	3.312	2.250	2.125	.880	.500	.562	10-32	D	3K		

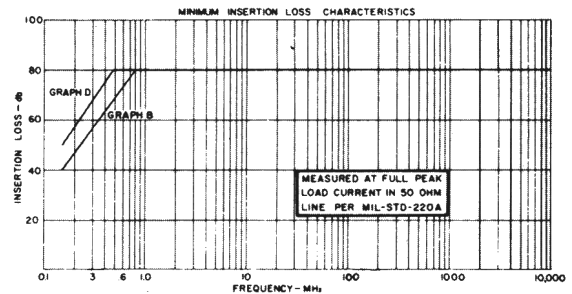
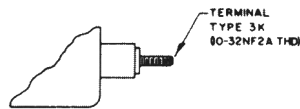
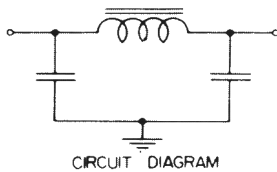
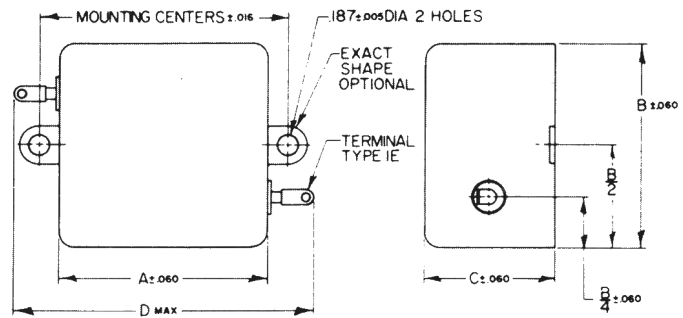
RF 3291-1	1A 250 VAC 0-400 Hz 600 VDC	1.750	1.250	1.000	.620	.281	.312	4-40	D	1E		
RF 3291-2	3A 250 VAC 0-400 Hz 600 VDC	2.000	2.000	1.000	.880	.500	.562	6-32	D	1E		
RF 3291-3	5A 250 VAC 0-400 Hz 600 VDC	2.000	2.000	1.250	.880	.500	.562	6-32	D	1E		
RF 3291-4	10A 250 VAC 0-400 Hz 600 VDC	2.000	2.000	1.750	.880	.500	.562	8-32	D	3K		
RF 3291-5	15A 250 VAC 0-400 Hz 600 VDC	2.500	2.000	1.875	.880	.500	.562	6-32	B	3K		
RF 3291-6	15A 250 VAC 0-400 Hz 600 VDC	2.750	2.500	1.750	.880	.500	.562	6-32	D	3K		
RF 3291-7	30A 250 VAC 0-400 Hz 600 VDC	3.062	2.875	2.125	.880	.500	.562	10-32	D	3K		
RF 3291-8	55A 250 VAC 0-400 Hz 600 VDC	3.062	3.062	2.500	.880	.500	.562	10-32	B	3K		
RF 3291-9	55A 250 VAC 0-400 Hz 600 VDC	3.500	3.500	2.500	.880	.500	.562	10-32	D	3K		

Operating temperature range: -65°C to +85°C.

RECTANGULAR FILTERS

FOR CHASSIS MOUNTING
INCLUDING STYLE FL53
M15733/4

100 VDC, 125 VAC/400 VDC
250 VAC/600 VDC



RFI PART NO.	RATING	A	DIMENSIONS B	C	D	MOUNTING CENTER	INSERTION LOSS GRAPH	TERMINAL TYPE
RF 3292-1	1A 100 VDC	1.750	1.250	.875	3.406	2.125	D	1E
RF 3292-2	3A 100 VDC	1.750	1.250	1.000	3.406	2.125	D	1E
RF 3292-3	5A 100 VDC	1.750	1.250	1.125	3.594	2.125	B	1E
RF 3292-4	5A 100 VDC	2.000	2.000	1.000	3.594	2.375	D	1E
RF 3292-5	10A 100 VDC	2.000	2.000	1.125	3.594	2.375	D	3K
RF 3292-6	15A 100 VDC	2.000	2.000	1.250	3.594	2.375	D	3K
RF 3292-7	30A 100 VDC	2.000	2.000	1.500	3.594	2.375	B	3K
RF 3292-8	30A 100 VDC	2.500	2.000	1.750	4.219	2.938	D	3K
RF 3292-9	55A 100 VDC	2.875	2.250	1.562	4.594	3.500	B	3K
RF 3292-10	55A 100 VDC	2.875	2.250	1.875	4.594	3.500	D	3K

FL 53

M15733/4 DASH NO.	RFI PART NO.	RATING	A	DIMENSIONS B	C	D	MOUNTING CENTER	INSERTION LOSS GRAPH	TERMINAL TYPE
0001	RF 3286-1	1A 125 VAC 0-400 Hz 400 VDC	1.750	1.250	.875	3.406	2.125	D	1E
0002	RF 3286-2	3A 125 VAC 0-400 Hz 400 VDC	2.000	2.000	.875	3.594	2.375	D	1E
0003	RF 3286-3	5A 125 VAC 0-400 Hz 400 VDC	2.000	2.000	1.125	3.594	2.375	D	1E
0004	RF 3286-4	10A 125 VAC 0-400 Hz 400 VDC	2.000	2.000	1.500	3.594	2.375	D	3K
0005	RF 3286-5	15A 125 VAC 0-400 Hz 400 VDC	2.500	2.000	1.500	4.094	2.938	B	3K
0006	RF 3286-6	15A 125 VAC 0-400 Hz 400 VDC	2.500	2.000	1.750	4.094	2.938	D	3K
0007	RF 3286-7	30A 125 VAC 0-400 Hz 400 VDC	2.500	2.000	2.125	4.094	2.938	B	3K
0008	RF 3286-8	30A 125 VAC 0-400 Hz 400 VDC	3.250	2.250	2.125	4.969	3.875	D	3K
0009	RF 3286-9	55A 125 VAC 0-400 Hz 400 VDC	3.188	2.250	2.125	4.906	3.812	B	3K
0010	RF 3286-10	55A 125 VAC 0-400 Hz 400 VDC	3.312	2.250	2.125	5.031	3.938	D	3K

RF 3287-1	1A 250 VAC 0-400 Hz 600 VDC	1.750	1.250	1.000	3.406	2.125	D	1E
RF 3287-2	3A 250 VAC 0-400 Hz 600 VDC	2.000	2.000	1.000	3.594	2.375	D	1E
RF 3287-3	5A 250 VAC 0-400 Hz 600 VDC	2.000	2.000	1.250	3.594	2.375	D	1E
RF 3287-4	10A 250 VAC 0-400 Hz 600 VDC	2.000	2.000	1.750	3.594	2.375	D	3K
RF 3287-5	15A 250 VAC 0-400 Hz 600 VDC	2.500	2.000	1.875	4.094	2.938	B	3K
RF 3287-6	15A 250 VAC 0-400 Hz 600 VDC	2.750	2.500	1.750	4.281	3.187	D	3K
RF 3287-7	30A 250 VAC 0-400 Hz 600 VDC	3.062	2.875	2.125	4.656	3.500	D	3K
RF 3287-8	55A 250 VAC 0-400 Hz 600 VDC	3.062	3.062	2.500	4.656	3.500	B	3K
RF 3287-9	55A 250 VAC 0-400 Hz 600 VDC	3.500	3.500	2.500	5.094	3.938	D	3K

Operating temperature range: -65°C to $+85^{\circ}\text{C}$.

RECTANGULAR FILTERS

FOR CHASSIS MOUNTING

250 VAC/600 VDC

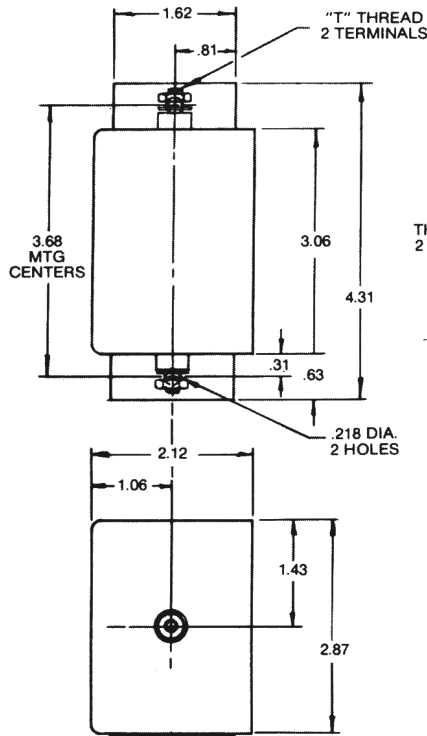


FIGURE NO. 1

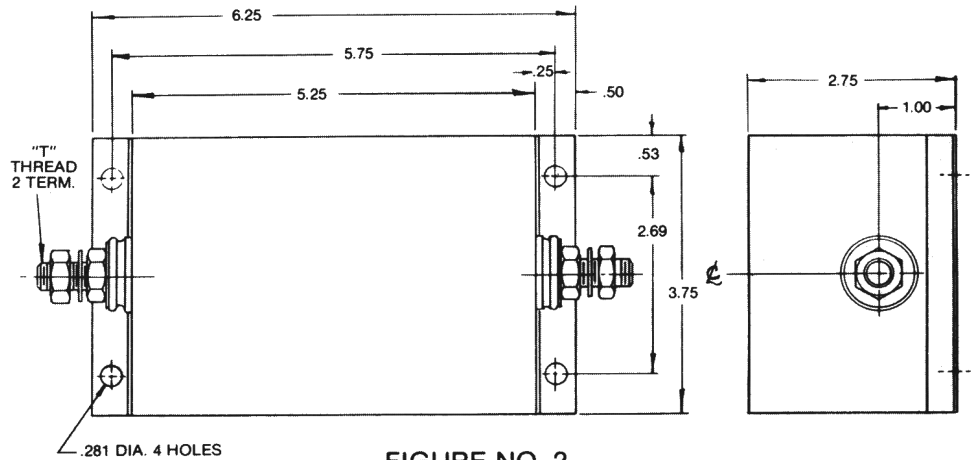
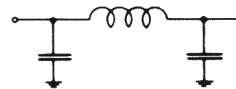


FIGURE NO. 2



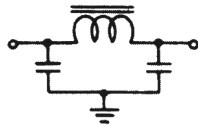
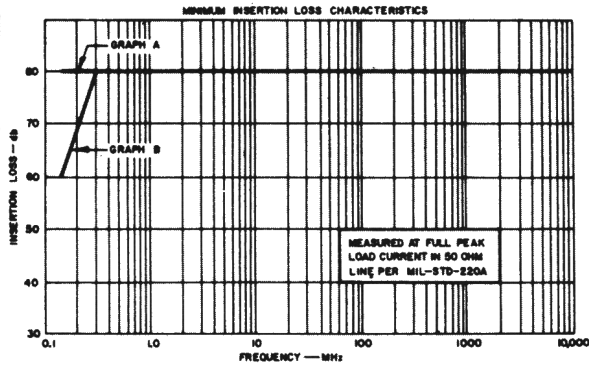
CIRCUIT DIAGRAM

RFI PART NO.	MAX CURRENT (AMPERES)	MAX VOLTAGE AC	MAX VOLTAGE DC	POWER LINE FREQ.	FIG. NO.	ATTENUATION (db) (NO LOAD, TYPICAL)										"T" THD SIZE	APPROX. WT. (LBS.)
						0.15 MHz	0.3 MHz	0.5 MHz	1.0 MHz	5.0 MHz	10 MHz	30 MHz	50 MHz	100 MHz	150 MHz		
RF3576	5	250	600	0—60Hz	1	62	85	84	77	69	64	55	51	47	42	10-32NF-2A	1.50
RF3577	10	250	600	0—60Hz	1	62	85	84	77	69	64	55	51	47	42	10-32NF-2A	1.50
RF3578	15	250	600	0—60Hz	1	47	67	83	85	73	68	63	59	50	42	10-32NF-2A	1.75
RF418	25	250	600	0—60Hz	1	47	67	83	85	73	68	63	59	50	42	10-32NF-2A	1.75
RF4280	30	250	600	0—60Hz	1	40	64	81	79	70	65	57	53	45	40	10-32NF-2A	1.75
RF2326	50	250	600	0—60Hz	1	35	60	70	75	65	60	55	50	40	35	10-32NF-2A	1.75
RF3579	75	250	600	0—60Hz	2	67	86	91	89	73	68	60	54	40	33	¾-16NC-2A	5.25
RF3216	100	250	600	0—60Hz	2	67	86	91	89	73	68	60	54	40	33	¾-16NC-2A	5.25
RF3580	5	250	600	0—400Hz	1	62	85	84	77	69	64	55	51	47	42	10-32NF-2A	1.50
RF3581	10	250	600	0—400Hz	1	62	85	84	77	69	64	55	51	47	42	10-32NF-2A	1.50
RF3173	15	250	600	0—400Hz	1	47	67	83	85	73	68	63	59	50	42	10-32NF-2A	1.75
RF3174	25	250	600	0—400Hz	1	47	67	83	85	73	68	63	59	50	42	10-32NF-2A	1.75
RF596	50	250	600	0—400Hz	1	35	60	70	75	65	60	55	50	40	35	10-32NF-2A	1.75
RF3582	75	250	600	0—400Hz	2	67	86	91	89	73	68	60	54	40	33	¾-16NC-2A	5.25
RF3583	100	250	600	0—400Hz	2	67	86	91	89	73	68	60	54	40	33	¾-16NC-2A	5.25

DUAL CIRCUIT TRIPLE CIRCUIT POWER FILTERS

FOR FEED-THRU MOUNTING

M15733/75



SCHEMATIC DIAGRAM

1. Operating Temperature: -55°C to +125°C.
2. Maximum Voltage Drop: 1% of rated voltage.
3. Conforms to applicable requirements of MIL-F-15733
4. Bracket supplied with units over 6 inches long.

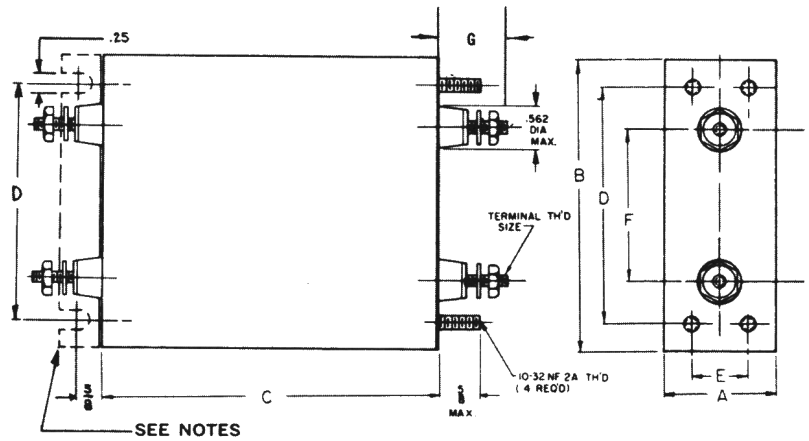


FIGURE 1

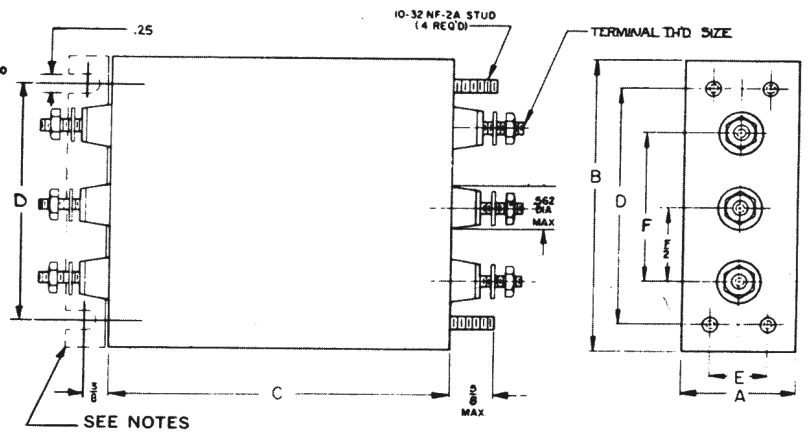


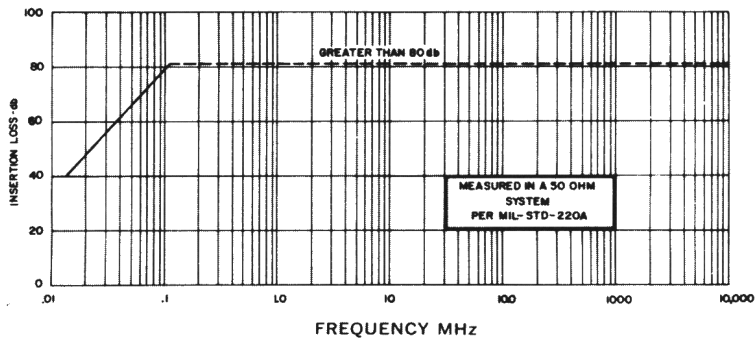
FIGURE 2

FIGURE 1 DUAL CIRCUIT FILTERS

M15733/	PART NO.	RATING	A	B	C	D	E	F	TERMINAL TH'D SIZE	G MAX	INSERTION LOSS GRAPH
/75-0001	RF3706-1	2x3A	1.13	2.25	3.58	1.750	.625	.75	8-32 NC-2A	.69	B
/75-0003	RF3706-2	2x5A	1.25	2.50	4.71	2.000	.750	1.25	8-32 NC-2A	.69	B
/75-0005	RF3706-3	2x10A	1.50	3.00	5.37	2.500	1.000	1.50	8-32 NC-2A	.69	B
/75-0007	RF3706-4	2x20A	1.75	3.50	6.19	3.000	1.250	1.75	8-32 NC-2A	.69	B
/75-0008	RF3706-5	2x30A	2.25	4.50	6.08	4.000	1.750	2.25	10-32 NF-2A	.69	B
/75-0009	RF3706-6	2x50A	2.25	4.50	6.94	4.000	1.750	2.25	1/4-20 UNC	1.25	B
/75-0002	RF3707-1	2x3A	1.50	3.00	4.94	2.500	1.000	1.50	8-32 NC-2A	.69	A
/75-0004	RF3707-2	2x5A	1.50	3.00	5.57	2.500	1.000	1.50	8-32 NC-2A	.69	A
/75-0006A	RF3707-3	2x10A	2.25	4.50	6.44	4.000	1.75	2.25	8-32 NC-2A	.69	A

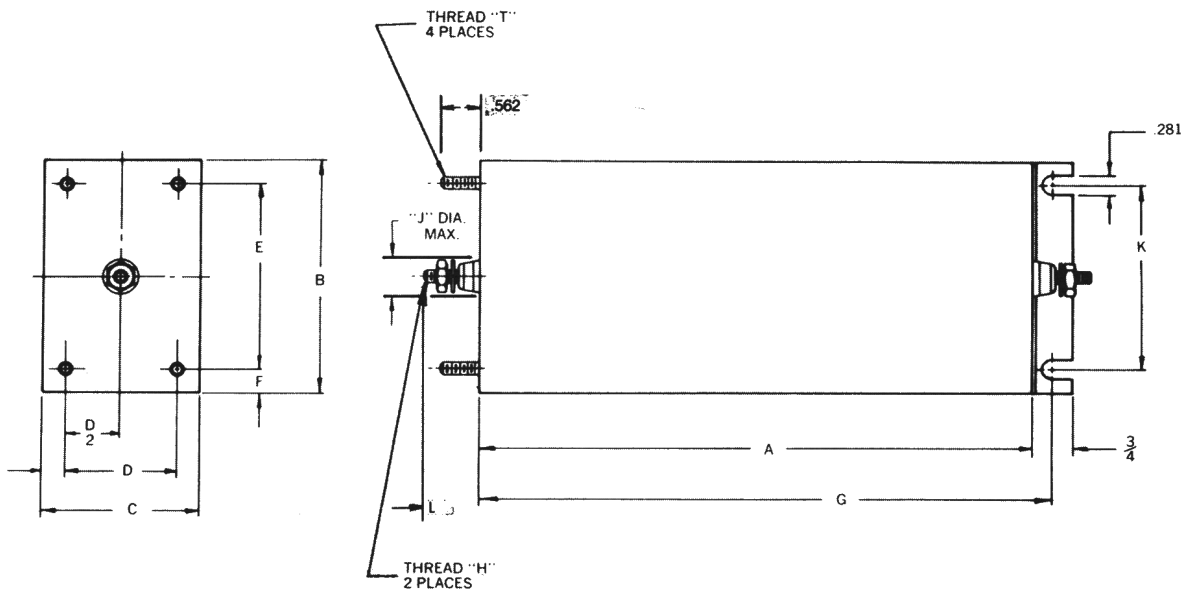
FIGURE 2 TRIPLE CIRCUIT FILTERS

/75-0010	RF3708-1	3x3A	1.13	3.38	3.58	2.875	.625	2.00	8-32 NC-2A	.69	B
/75-0012	RF3708-2	3x5A	1.25	3.75	4.71	3.250	.750	2.50	8-32 NC-2A	.69	B
/75-0014	RF3708-3	3x10A	1.50	4.50	5.37	4.000	1.000	3.00	8-32 NC-2A	.69	B
/75-0016	RF3708-4	3x20A	1.75	5.25	6.19	4.750	1.250	3.50	8-32 NC-2A	.69	B
/75-0017	RF3708-5	3x30A	2.25	6.75	6.08	6.250	1.750	4.50	10-32 NF-2A	.69	B
/75-0018	RF3708-6	3x50A	2.25	6.75	6.94	6.250	1.750	4.50	1/4-20 UNC	1.25	B
/75-0011	RF3709-1	3x3A	1.50	4.50	4.94	4.000	1.000	3.00	8-32 NC-2A	.69	A
/75-0013	RF3709-2	3x5A	1.50	4.50	5.57	4.000	1.000	3.00	8-32 NC-2A	.69	A
/75-0015	RF3709-3	3x10A	2.25	6.75	6.44	6.250	1.750	4.50	8-32 NC-2A	.69	A



SERIES 2925 POWER FILTERS

FOR
FEED-THRU MOUNTING
40 db AT 14 KHz
PER MIL-STD-220A



PART NO.	RATING	DIMENSIONS							THREAD "H"	L	THREAD "T"	"J" DIA.	K ± 1/4
		A ± 1/16	B ± 1/16	C ± 1/32	D ± 1/16	E ± 1/16	F ± 1/32	G ± 1/32					
RF2925-5B	5A 115VAC 0-400Hz	8	2	2	1 1/4	1 1/4	3/8	8 3/8	8-32NC-2A	.69	8-32NC-2A	.562	1 1/4
RF2925-10B	10A 115VAC 0-400Hz	8	3 1/4	2 1/8	1 1/4	2 1/2	3/8	8 3/8	8-32NC-2A	.69	10-32NC-2A	.562	2 1/4
RF2925-20B	20A 115VAC 0-400Hz	12	3 1/4	2 1/8	1 1/4	2 1/2	3/8	12 3/8	8-32NC-2A	.69	10-32NC-2A	.562	2 1/4
RF2925-30B	30A 115VAC 0-400Hz	12	3 1/4	2 1/2	1 3/4	2 1/2	3/8	12 3/8	10-32NC-2A	.69	10-32NC-2A	.687	2 1/4
RF2925-50B	50A 115VAC 0-400Hz	12	3	3	2 1/4	2 1/4	3/8	12 3/8	1/4-20NC-2A	1.25	10-32NC-2A	.875	2 1/4

1. Operating Temperature: -55°C to 125°C.
2. Maximum Voltage Drop: 1% of Rated Voltage.
3. Dielectric Test: 2X Rated Voltage.
4. Conforms to applicable requirements of MIL-F-15733.

SERIES 5400 GENERAL PURPOSE FILTERS

The 5400 Series of general purpose filters are designed for use in a wide range of commercial applications, including data processing equipment, medical and industrial electronics applications, office equipment and other electronic devices.

Standard configurations are indicated. Parts can be modified, if necessary, to meet individual customer applications.

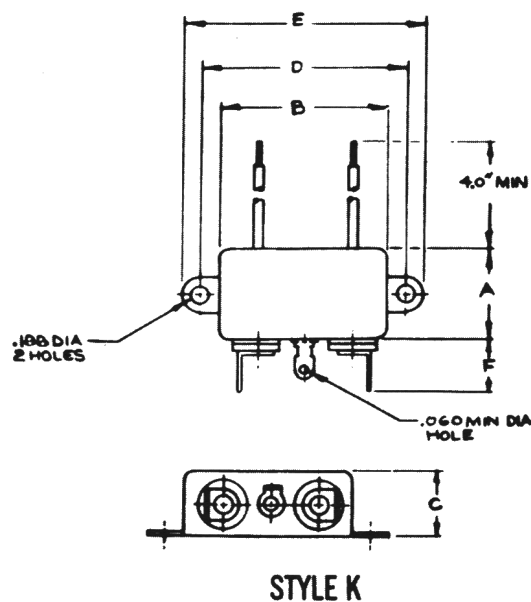
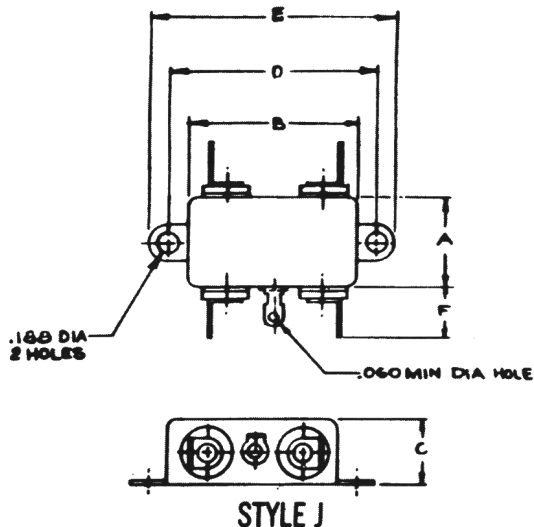
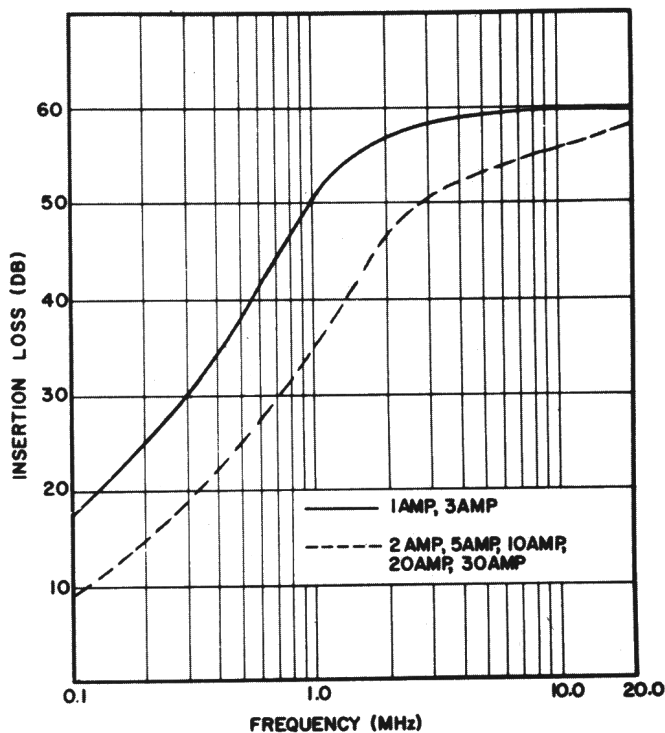
Terminals for Styles J and K will accept quick disconnect lugs or may be used as solder terminals, as required.

ELECTRICAL CHARACTERISTICS

MAXIMUM LEAKAGE CURRENT EACH
LINE TO GROUND @ 115VAC 60 Hz: 0.5MA
@ 250VAC 60 Hz: 1.1 MA
TEST VOLTAGE: 2250 VDC
OPERATING FREQUENCY: 50-400Hz
RATED VOLTAGE: 115-250VAC

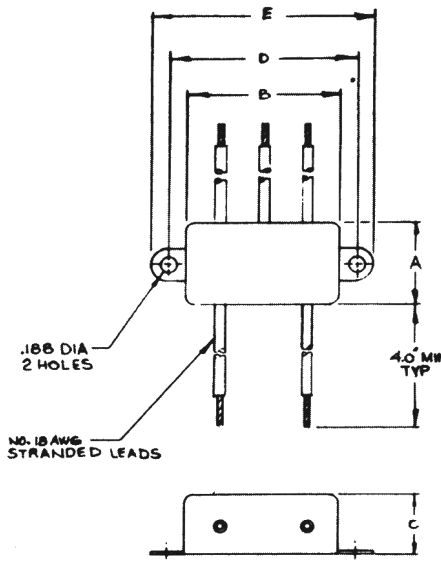
PART NO.	MAX CURRENT (AMPERE)	STYLE	DIMENSIONS (INCHES)					
			A MAX	B ± .06	C ± .05	D ± .015	E ± .03	F MAX
RF5400 J01	1	J	0.94	1.75	0.65	2.125	2.50	0.62
K01		K	0.94	1.75	0.65	2.125	2.50	0.62
U01		U	0.94	1.75	0.65	2.125	2.50	—
W01		W	1.85	2.00	0.75	1.500	—	0.62
X01		X	1.85	2.00	0.75	1.500	—	—
RF5400 J02	2	J	0.94	1.75	0.65	2.125	2.50	0.62
K02		K	0.94	1.75	0.65	2.125	2.50	0.62
U02		U	0.94	1.75	0.65	2.125	2.50	—
W02		W	1.85	2.00	0.75	1.500	—	0.62
X02		X	1.85	2.00	0.75	1.500	—	—
RF5400 J03	3	J	1.33	1.75	0.75	2.125	2.50	0.62
K03		K	1.33	1.75	0.75	2.125	2.50	0.62
U03		U	1.33	1.75	0.75	2.125	2.50	—
W03		W	2.09	2.00	0.75	1.500	—	0.62
X03		X	2.09	2.00	0.75	1.500	—	—
RF5400 J05	5	J	1.33	1.75	0.75	2.125	2.50	0.62
K05		K	1.33	1.75	0.75	2.125	2.50	0.62
U05		U	1.33	1.75	0.75	2.125	2.50	—
W05		W	2.09	2.00	0.75	1.500	—	0.62
X05		X	2.09	2.00	0.75	1.500	—	—
RF5400 J10	10	J	1.33	1.75	1.13	2.125	2.50	0.62
K10		K	1.33	1.75	1.13	2.125	2.50	0.62
U10		U	1.33	1.75	1.13	2.125	2.50	—
V10		V	1.25	1.75	1.13	2.125	2.50	0.56
W10		W	2.09	2.00	1.13	1.500	—	0.62
X10		X	2.09	2.00	1.13	1.500	—	—
RF5400 J20	20	J	2.06	2.00	1.13	2.375	2.78	0.62
V20		V	2.06	2.00	1.13	2.375	2.78	0.56
RF5400 Y30	30	Y	3.87	3.31	1.50	3.750	4.12	0.75

TYPICAL INSERTION LOSS (PER MIL-STD-220A)

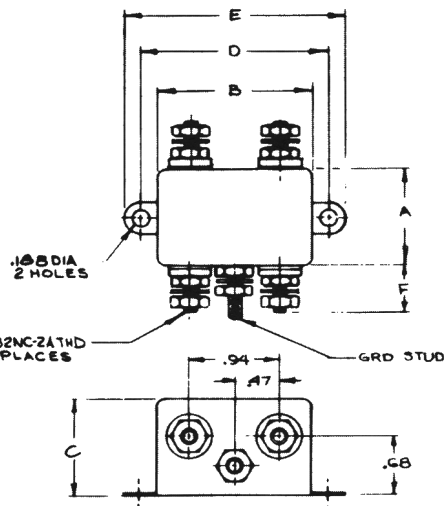


SERIES 5400

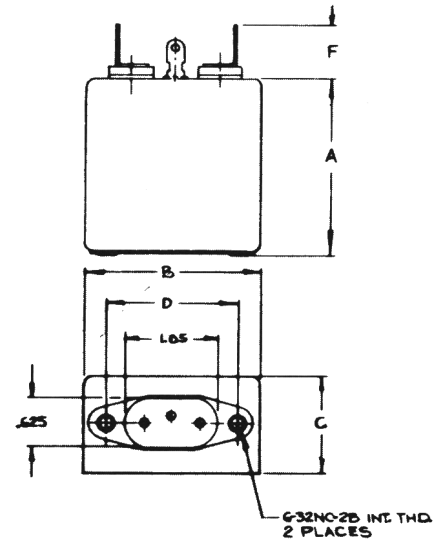
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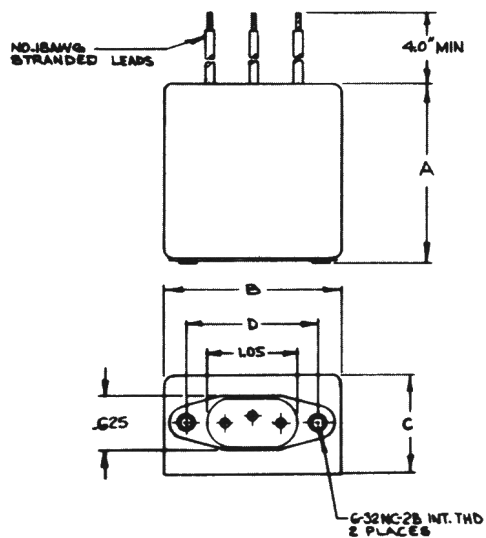
STYLE U



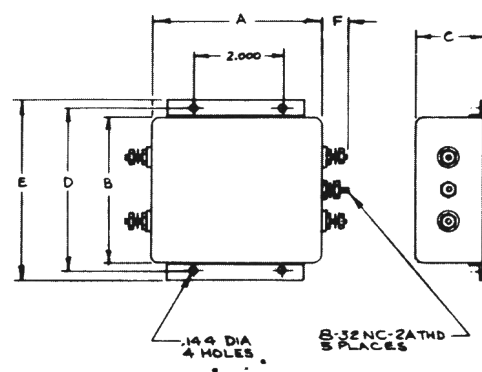
STYLE V



STYLE W



STYLE X



STYLE Y

SERIES 5500 GENERAL PURPOSE FILTERS

The 5500 Series of general purpose filters are designed for use in a wide range of commercial applications, including data processing equipment, medical and industrial electronics applications, office equipment and other electronic devices. These filters provide for the suppression of line-to-line as well as line-to-ground interference.

Standard configurations are indicated. Parts can be modified, if necessary, to meet individual customer applications.

Terminals for Styles J and K will accept quick disconnect lugs or may be used as solder terminals, as required.

ELECTRICAL CHARACTERISTICS

RATED VOLTAGE: 115-250 VAC

OPERATING FREQUENCY: 50-400 Hz

RATED CURRENT: See Table

TEST VOLTAGE:

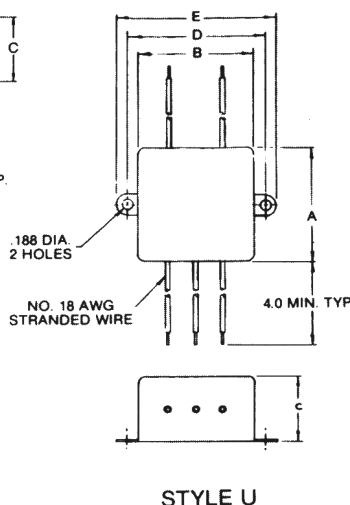
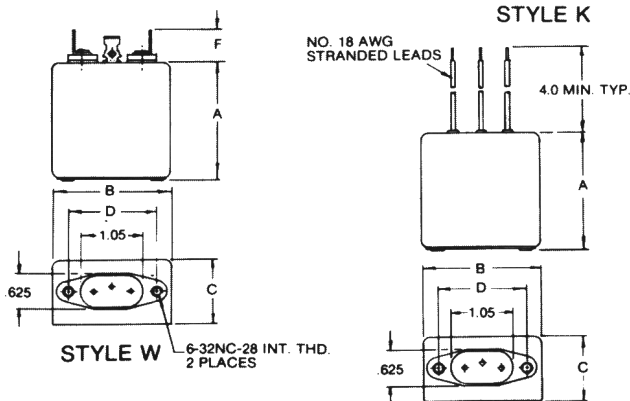
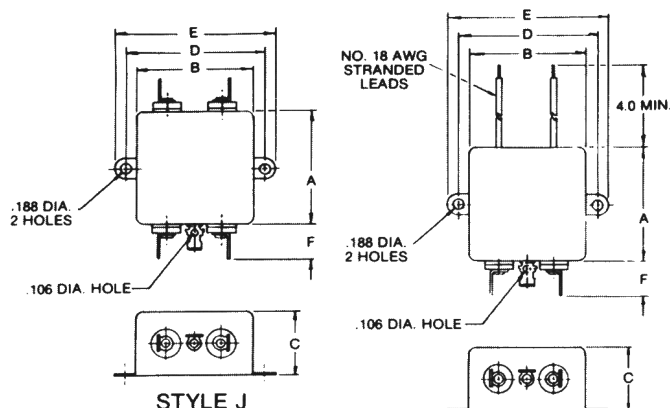
Line to ground — 2250 VDC

Line to line — 1450 VDC

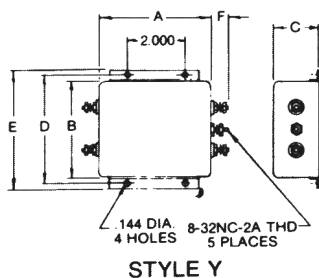
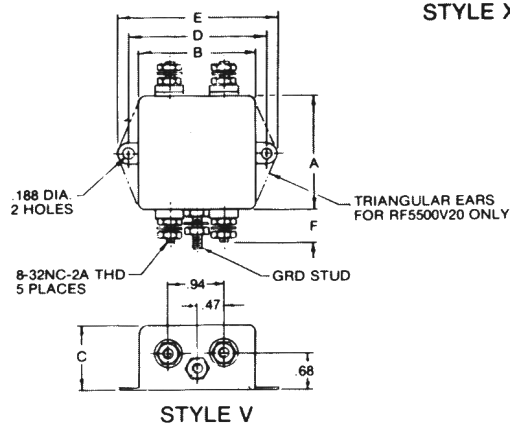
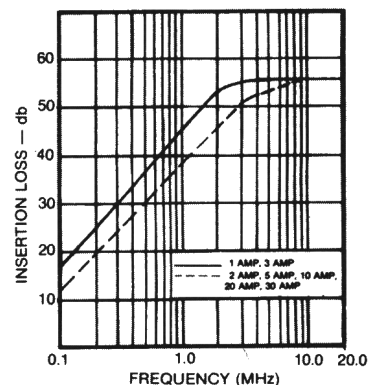
MAXIMUM LEAKAGE CURRENT

Each line to ground @ 115 VAC 60 Hz — 0.5 ma

@ 250 VAC 60 Hz — 1.1 ma



TYPICAL INSERTION LOSS (PER MIL-STD-220A)

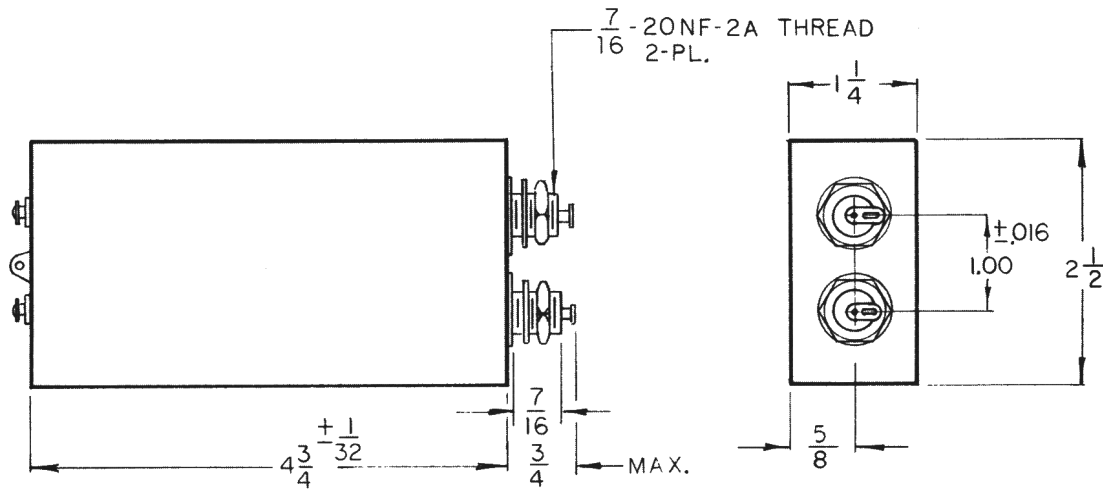


RFI PART NO.	MAX CURRENT (AMPERES)	STYLE	A MAX	B ±.06	C ±.03	D ±.015	E ±.03	F MAX
RF5500J01	1	J	1.85	2.00	.875	2.375	2.78	0.62
RF5500K01		K	1.85	2.00	.875	2.375	2.78	0.62
RF5500U01		U	1.85	2.00	.875	2.375	2.78	—
RF5500W01		W	2.09	2.00	.875	1.500	—	0.62
RF5500X01		X	2.09	2.00	.875	1.500	—	—
RF5500J02	2	J	1.85	2.00	.875	2.375	2.78	0.62
RF5500K02		K	1.85	2.00	.875	2.375	2.78	0.62
RF5500U02		U	1.85	2.00	.875	2.375	2.78	—
RF5500W02		W	2.09	2.00	.875	1.500	—	0.62
RF5500X02		X	2.09	2.00	.875	1.500	—	—
RF5500J03	3	J	1.85	2.00	1.13	2.375	2.78	0.62
RF5500K03		K	1.85	2.00	1.13	2.375	2.78	0.62
RF5500U03		U	1.85	2.00	1.13	2.375	2.78	—
RF5500W03		W	2.09	2.00	1.13	1.500	—	0.62
RF5500X03		X	2.09	2.00	1.13	1.500	—	—
RF5500J05	5	J	1.85	2.00	1.13	2.375	2.78	0.62
RF5500K05		K	1.85	2.00	1.13	2.375	2.78	0.62
RF5500U05		U	1.85	2.00	1.13	2.375	2.78	—
RF5500W05		W	2.09	2.00	1.13	1.500	—	0.62
RF5500X05		X	2.09	2.00	1.13	1.500	—	—
RF5500J10	10	J	2.09	2.00	1.13	2.375	2.78	0.62
RF5500K10		K	2.09	2.00	1.13	2.375	2.78	0.62
RF5500U10		U	2.09	2.00	1.13	2.375	2.78	—
RF5500V10		V	2.09	2.00	1.13	2.375	2.78	0.62
RF5500J20	20	J	2.06	2.55	1.50	2.937	3.40	0.62
RF5500V20	20	V	2.06	2.55	1.50	2.937	3.32	0.62
RF5500Y30	30	Y	3.87	3.31	1.50	3.750	4.12	0.75

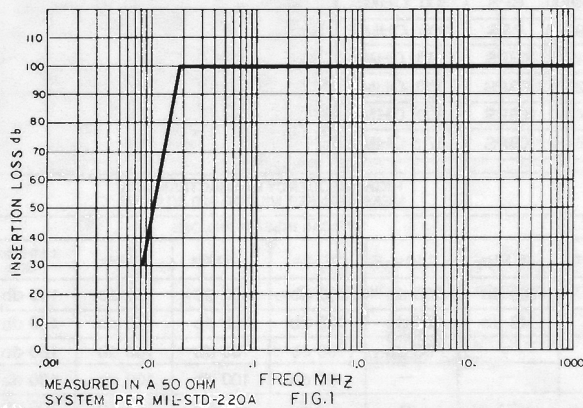
RF2398

TELEPHONE LINE FILTER

FOR SECURE INSTALLATIONS



TELEPHONE LINE FILTER — TYPE RF2398



NOTES

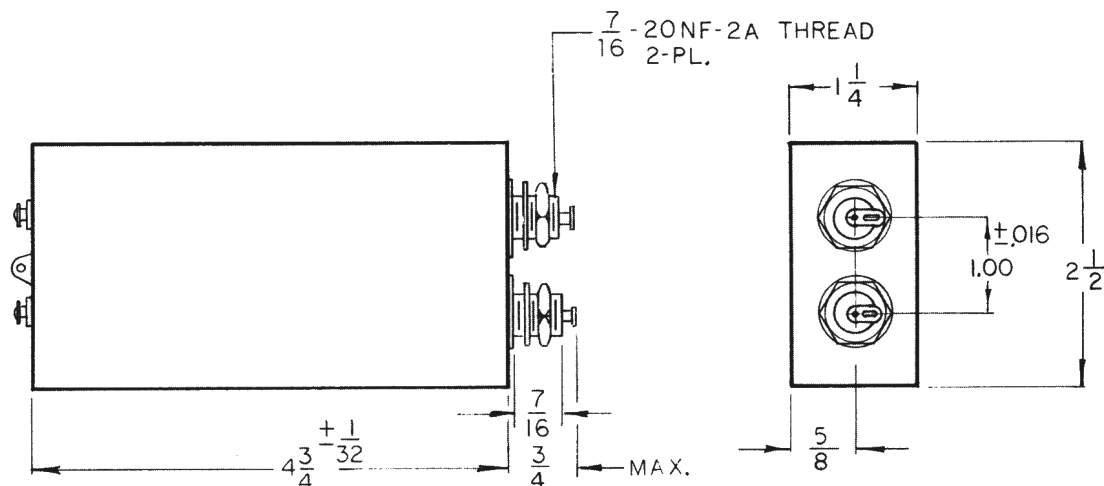
1. Rating: $2 \times 0.5A$ 600 VDC
2. Insertion loss pass band in 300 ohm line, unbalanced to ground per MIL-STD-220.
1 KHz .25 db maximum
3 KHz .6 db maximum
5 KHz 1.5 db maximum
Stop band per fig. 1
3. Operating temp.: $-55^{\circ}C$ to $+85^{\circ}C$.
4. Unit hermetically sealed.
5. Finish: hot solder dip.
6. Filter meets all applicable electrical and environmental specs. of MIL-F-15733.
7. Elements corresponding to each other by mirror symmetry in the ground plane will not differ from each other by more than 2%.
8. Approved by the cognizant security agencies for secure telephone installations.

The RF2398 is available in multi circuit assemblies.

The part number would be RF6800 with any number of filter elements.

For example RF6800-100-75 would be supplied with 75 Dual filter elements with the remaining 25 holes sealed with RF tight plugs.

DATA LINE FILTER FOR SECURE INSTALLATIONS



MECHANICAL CONFIGURATION — ALL TYPES

PART NO.	RATING	DATA RATE	IMPED. LINE TO GROUND
RF11497	2 × .5A 300 VDC	4800 BPS	300 OHMS
RF10694	2 × .5A 300 VDC	9600 BPS	300 OHMS
RF11486	2 × .5A 300 VDC	19.2 KBPS	300 OHMS
RF11481	2 × .15A 300 VDC	30.0 KBPS	300 OHMS
RF11747	2 × .5A 300 VDC	48.0 KBPS	300 OHMS
RF11646	2 × .1A 300 VDC	64.0 KBPS	67.5 OHMS

PART NO.	LOW FREQUENCY CHARACTERISTICS MEASURED IN IMPEDANCE SPECIFIED							HIGH FREQUENCY CHARACTERISTICS MEASURED PER MIL-STD-220, 50 OHMS					
	TYPICAL INSERTION LOSS							TYPICAL INSERTION LOSS					
	DC — 10 KHz	15 KHz	30 KHz	60 KHz	90 KHz	145 KHz	190 KHz	.05 MHz	.1 MHz	.25 MHz	.35 MHz	.7 MHz	1 MHz to 1 GHz
RF11497	.5 db	3.0 db	—	—	—	—	—	100 db	100 db	100 db	100 db	100 db	100 db
RF10694	.5 db	.5 db	3.0 db	—	—	—	—	45 db	100 db	100 db	100 db	100 db	100 db
RF11486	.5 db	.5 db	.5 db	3.0 db	—	—	—	—	55 db	100 db	100 db	100 db	100 db
RF11481	.5 db	.5 db	.5 db	.5 db	3.0 db	—	—	—	—	60 db	100 db	100 db	100 db
RF11747	.5 db	.5 db	.5 db	.5 db	.5 db	3.0 db	—	—	—	—	50 db	100 db	100 db
RF11646	.5 db	.5 db	.5 db	.5 db	.5 db	.5 db	3.0 db	—	—	—	30 db	90 db	100 db

These data filters are available in the following multi-circuit assemblies.

Internal filter

P/N RF11497
P/N RF10694
P/N RF11486
P/N RF11481
P/N RF11747
P/N RF11646

Multi filter assembly

RF6801
RF6802
RF6803
RF6804
RF6805
RF6806

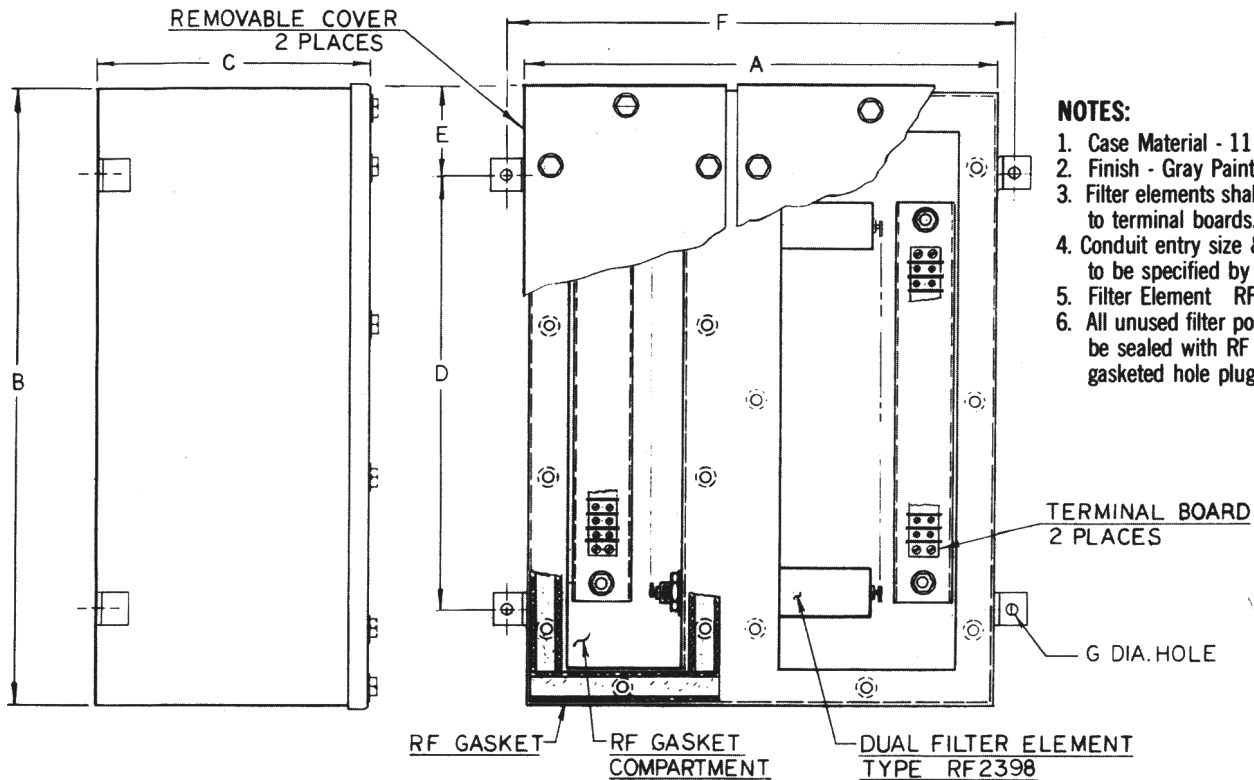
Parts may be ordered with any number of filter elements.

For example RF6801-100-75 would be supplied with 75 Dual filters elements with the 25 remaining holes sealed with R.F. tight plugs.

The multi circuit assemblies, RF6801 thru RF6806, are the same size as the RF6800's in this catalog.

SIGNAL FILTER ASSEMBLIES FOR SECURE INSTALLATIONS

TYPE RF6800 SERIES
SIX TO TWENTY PAIR CAPACITY



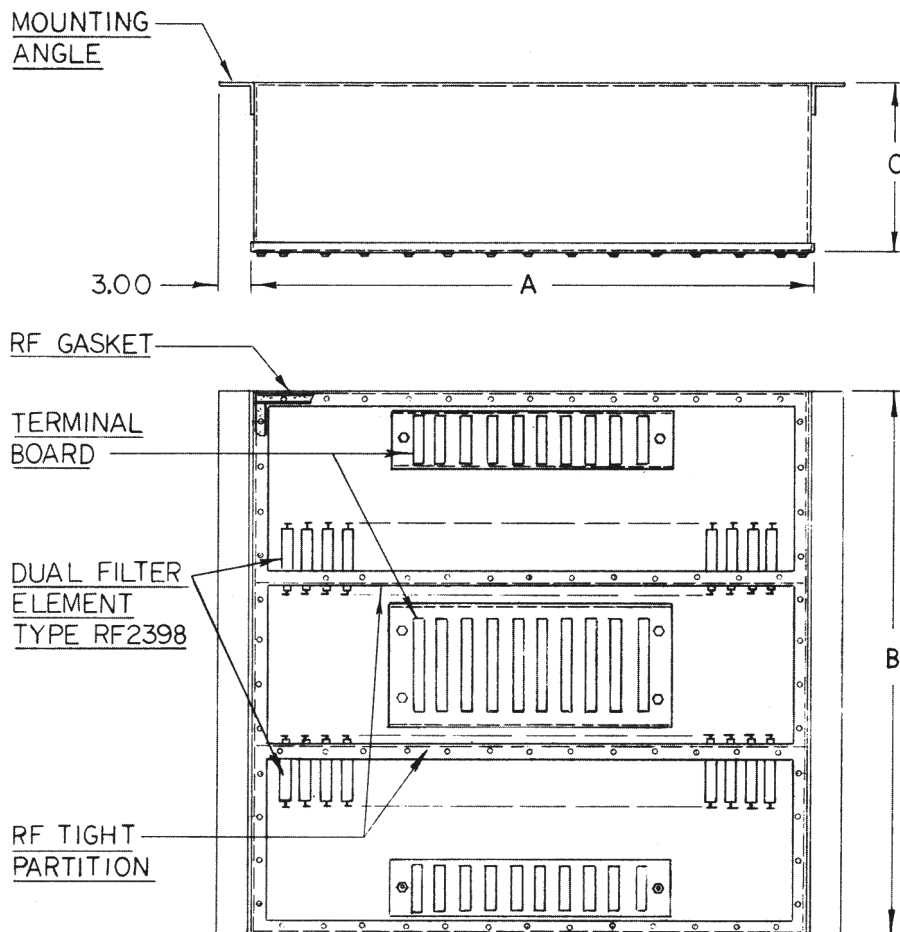
PART NO.	A	B	C	D	E	F	G	RATING	MAX. NO. OF DUAL FILTER ELEMENTS
RF6800-6	16	10 $\frac{1}{4}$	3 $\frac{3}{4}$	6 $\frac{1}{4}$	2	18	.390	12 x .5 AMP 600 VDC	6
RF6800-10	16	16 $\frac{1}{4}$	3 $\frac{3}{4}$	9 $\frac{1}{4}$	3 $\frac{1}{2}$	18	.390	20 x .5 AMP 600 VDC	10
RF6800-20	16	19	7	11	4	18	.390	40 x .5 AMP 600 VDC	20

Parts may be ordered with any no. of dual filter elements up to and including max. no. shown. For example: RF6800-6-4 would be supplied with (4) four dual filter elements and two R.F. tight hole plugs.

Filter cases are 11 gauge stainless steel. Filter elements (Type RF2398) are wired to terminal boards. The conduit entry size and location are to be specified by the customer. Data filters may be supplied in place of type RF2398 telephone filters.

SIGNAL FILTER ASSEMBLIES FOR SECURE INSTALLATIONS

**TYPE RF6800 SERIES
FIFTY TO TWO HUNDRED PAIR CAPACITY**



PART NO.	RATING	A	B	C	MAX. NO. OF DUAL FILTER ELEMENTS
RF6800-50	100 × .5 AMP 600 VDC	27	40	8	50
RF6800-100	200 × .5 AMP 600 VDC	33	45	12	100
RF6800-200	400 × .5 AMP 600 VDC	48	48	15	200

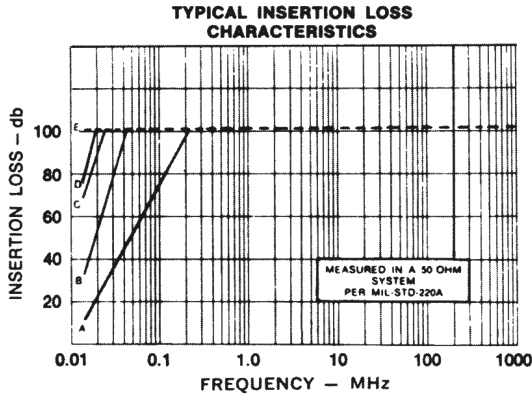
Parts may be ordered with any number of dual filter elements, up to and including maximum shown. For example: RF6800-100-75 would be capable of holding 100 dual filter elements, but would be supplied with 75 filters. All unused positions are sealed with RF tight sealing plugs.

Filter cases are 11 gauge stainless steel. Filter elements (Type RF2398) are wired to terminal boards. The conduit entry size and location are to be specified by the customer. Data filters may be supplied in place of type RF2398 telephone filters.

SERIES 222

SIGNAL AND TELEPHONE CIRCUIT

RFI/EMC FILTERS



LOW FREQUENCY CHARACTERISTICS
MEASURED IN A 300 OHM LINE TO GROUND SYSTEM

TYPE		TYPICAL INSERTION LOSS			
FIGURE 1	FIGURE 2	1 KHz	3 KHz	4 KHz	5 KHz
RF222-101	RF222-006	.25	.25	.25	0.5
RF222-002	RF222-007	0.17	0.17	0.17	0.5
RF222-003	RF222-008	0.25	0.60	1.7	11
RF222-004	RF222-009	0.20	0.30	0.80	2.8
RF222-205	RF222-010	0.17	0.5	2.0	18

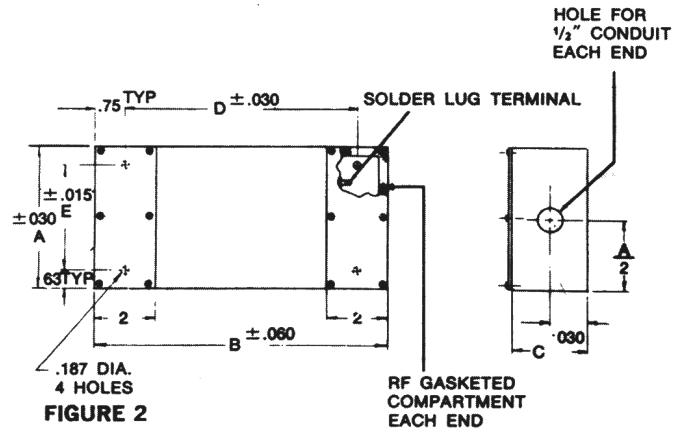
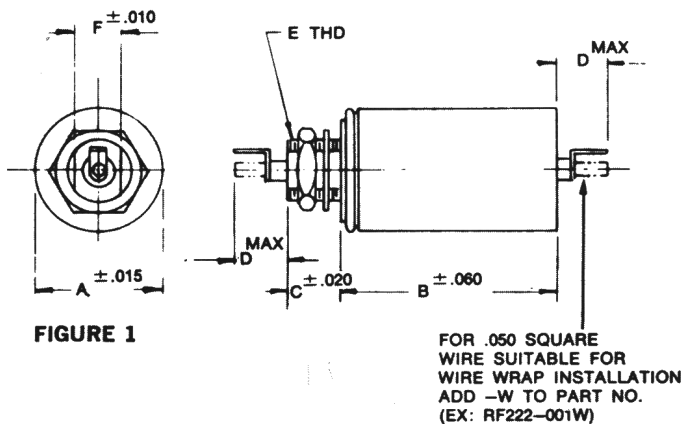


FIGURE 1

TYPE	RATING	GRAPH	A	B	C	D	E	F	MAX. RESISTANCE	APPROX. WEIGHT
RF222-101	0.5A 300VDC	A	1.13	3.25	.44	.50	3/16-.20	.370	4 Ohms	6 ozs.
RF222-002	0.15A 300VDC	B	1.00	3.37	.28	.50	3/16-.24	.250	12 Ohms	4 ozs.
RF222-003	0.15A 300VDC	C	1.00	3.63	.28	.50	3/16-.24	.250	14 Ohms	4 ozs.
RF222-004	0.5A 300VDC	D	1.25	5.00	.44	.50	3/16-.20	.370	12 Ohms	9 ozs.
RF222-205	0.15A 300VDC	E	1.38	4.13	.38	.50	3/16-.20	.655	11 Ohms	10 ozs.

FIGURE 2

TYPE	RATING	GRAPH	A	B	C	D	E	MAX. RESISTANCE	APPROX. WEIGHT
RF222-006	2 x 0.5A 300VDC	A	2.50	9.00	1.50	7.50	1.25	4 Ohms	24 ozs.
RF222-007	2 x 0.15A 300VDC	B	2.25	8.63	1.38	7.13	1.00	12 Ohms	20 ozs.
RF222-008	2 x 0.15A 300VDC	C	2.25	8.63	1.38	7.13	1.00	14 Ohms	20 ozs.
RF222-009	2 x 0.5A 300VDC	D	2.75	10.00	1.63	8.50	1.50	12 Ohms	36 ozs.
RF222-010	2 x 0.15A 300VDC	E	3.00	10.00	1.75	8.50	1.75	11 Ohms	48 ozs.

The Series 222 group of RFI/EMC filters for 600 OHM signal and telephone circuit applications are designed to cover the broad frequency spectrum requirements of our most sophisticated communication systems.

Filters may be supplied as individual cylindrical types suitable for "bulkhead" mounting, or dual circuit packages designed to be chassis mounted.

In addition, RFI Corporation has supplied pre-wired, multi-circuit box assemblies with hundreds of filters wired to telephone-type terminal boards, for ease of installation. These assemblies are provided ready for installation by RFI Corporation field personnel or by the customer at the site.

Filters can also be custom-engineered for specific requirements of pass and stop band frequencies, line impedance, mechanical configuration, and other pertinent parameters, consistent with particular system requirements.

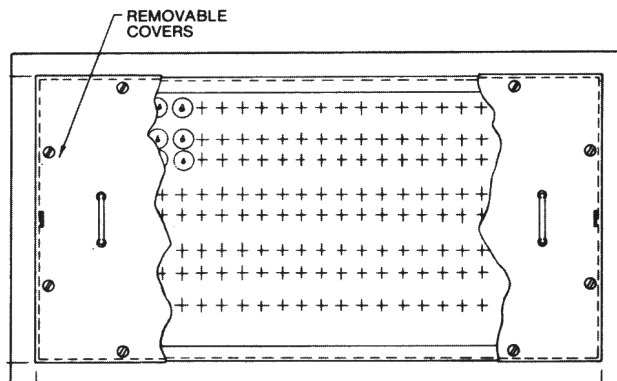
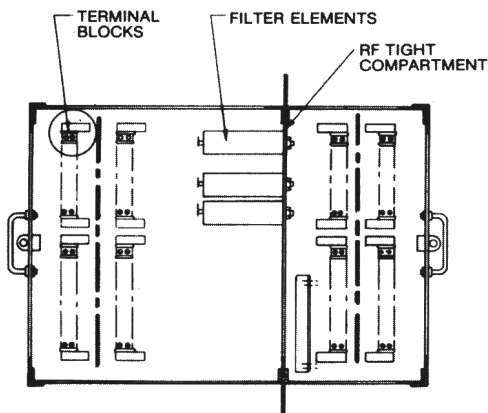
SIGNAL AND TELEPHONE CIRCUIT RFI/EMC FILTERS

MULTI-CIRCUIT ASSEMBLIES

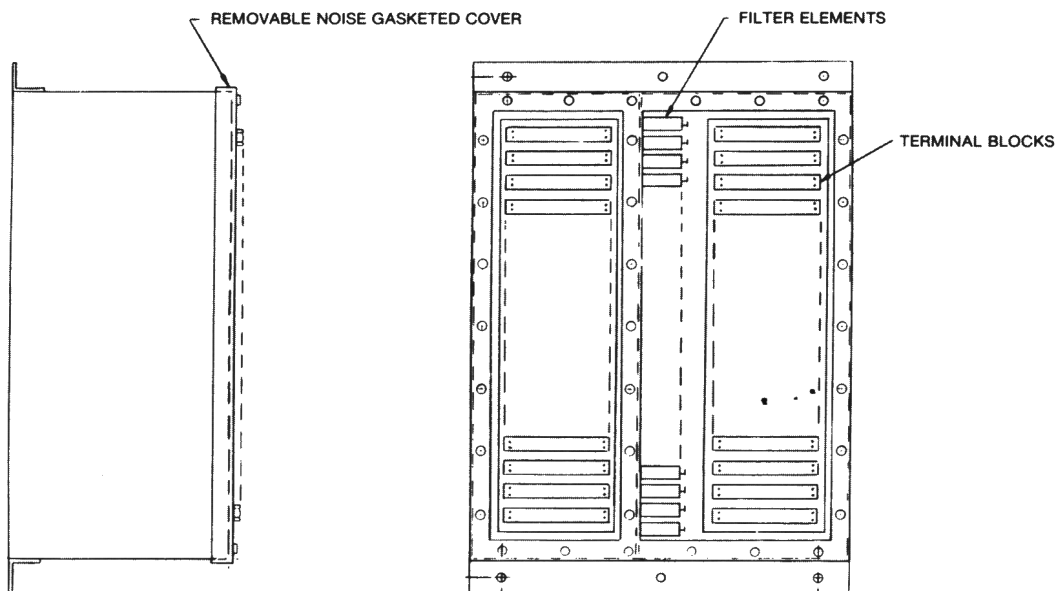
All signal and telephone circuit filters, both standard and custom-engineered, can be supplied as completely pre-wired, multi-circuit assemblies, for ease of on-site installation.

Assemblies consist of filters mounted in RF shielded cabinets, and pre-wired to appropriate terminal boards. Cabinets may be supplied with shielded and gasketed filter mounting holes for future expansion capability.

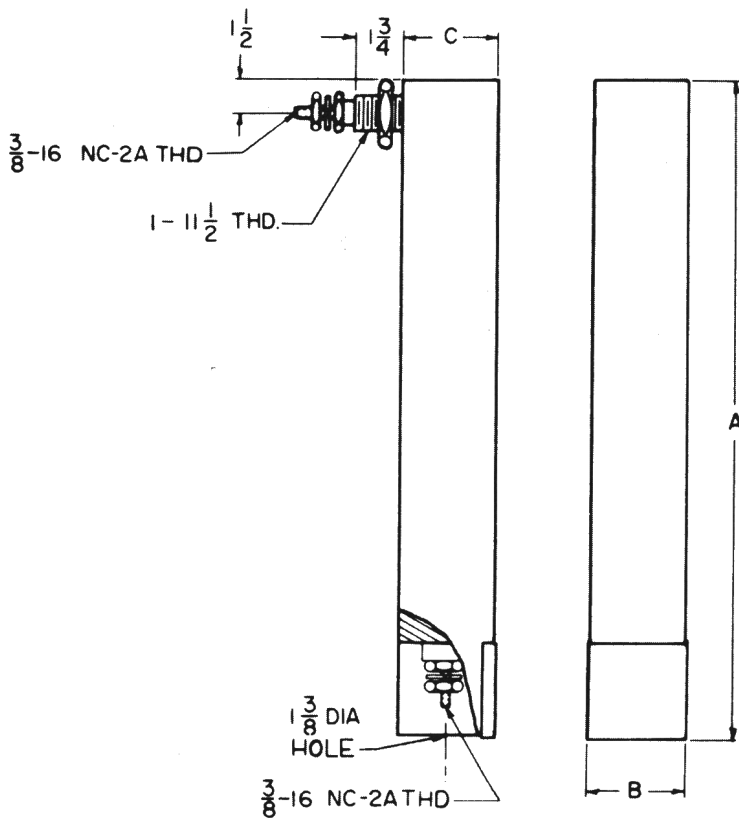
Typical cabinet assemblies are illustrated below.



TYPICAL THRU-WALL MOUNTED CABINET



TYPICAL FLUSH MOUNTED CABINET



SERIES 130 POWER LINE FILTERS FOR SHIELDED AREAS

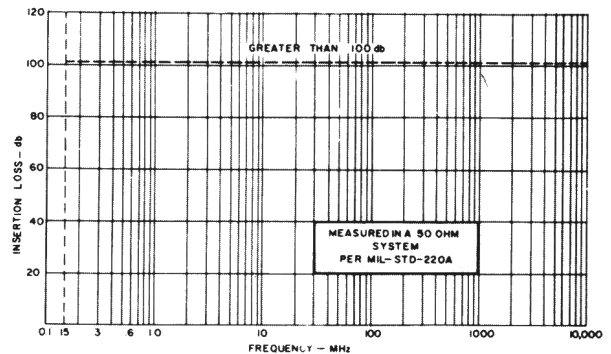
The RF 130 Series of power filters is designed for direct mounting through the wall of a shielded room or cabinet. The filter package includes a threaded mounting bushing which may be installed directly into a wireway, thus providing simple access to the filter termination. These filters are completely RF tight, and eliminate the need for removable covers which are often a source of RF leakage. Filters are provided with bleeder resistors installed in order to prevent electrical shock due to accidental discharge of filter capacitors while power is disconnected.

100 db FROM 150 KHz to 10 GHz PER MIL-STD-220A

RFI PART NO.	RATING*			DIMENSIONS			APPROX. WT. (LBS.)
				A	B	C	
RF130	30A	277 VAC	0-60 Hz	21	4	4 1/2	18
RF133	30A	277 VAC	0-400 Hz	21	4	4 1/2	18
RF134	50A	277 VAC	0-400 Hz	21	4	4 1/2	18
RF131	60A	277 VAC	0-60 Hz	21	4	4 1/2	18
RF135	75A	277 VAC	0-400 Hz	21	4	4 1/2	18
RF132	100A	277 VAC	0-60 Hz	21	4	4 1/2	18
RF136	100A	277 VAC	0-400 Hz	21	4	4 1/2	18

ALL VOLTAGE RATINGS ARE LINE TO GROUND. PARTS RATED AT 277 VAC ARE SUITABLE FOR USE IN A 480 VAC. LINE TO LINE SYSTEM AT 60 Hz.

*120 VAC MAX. OPERATING VOLTAGE AT LINE FREQ. OF 400 Hz.

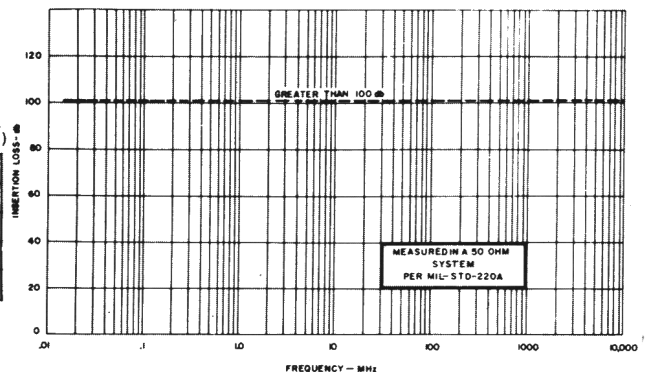


100 db FROM 14 KHz to 10 GHz PER MIL-STD-220A, FULL LOAD

RFI PART NO.	RATING*			DIMENSIONS			APPROX. WT. (LBS.)
				A	B	C	
RF137	30A	277 VAC	0-400 Hz	34	4 1/2	5	30
RF138	50A	277 VAC	0-400 Hz	34	4 1/2	5	30
RF139	100A	277 VAC	0-400 Hz	40	10	5 1/2	95
RF140	150A	277 VAC	0-400 Hz	40	15	5 1/2	135
RF141	200A	277 VAC	0-400 Hz	40	15	5 1/2	150

ALL VOLTAGE RATINGS ARE LINE TO GROUND. PARTS RATED AT 277 VAC ARE SUITABLE FOR USE IN 480 VAC. LINE TO LINE SYSTEM AT 60 Hz.

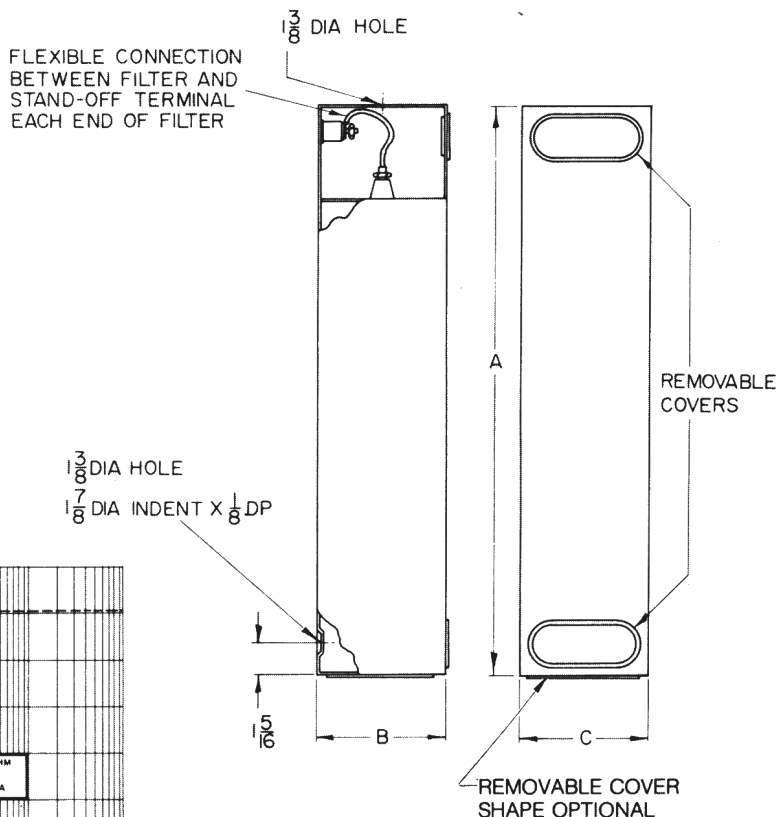
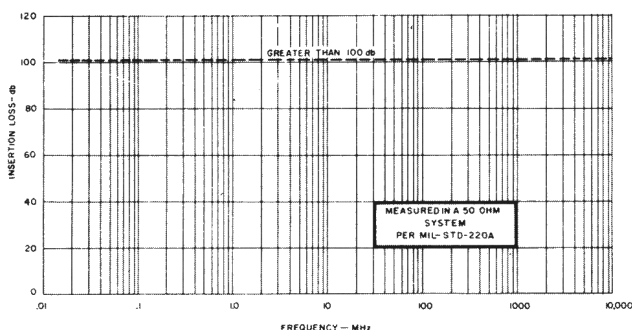
*120 VAC MAX. OPERATING VOLTAGE AT LINE FREQ. OF 400 Hz.



SERIES 6300

POWER LINE FILTERS FOR SHIELDED AREAS

100 db FROM 14 KHz to
10 GHz PER MIL-STD-220A,
FULL LOAD



RFI PART NO.		RATING*		A	DIMENSIONS B	C	APPROX. WT. (LBS.)
RF6300-1	5A	277 VAC	0-400 Hz	28	4 3/4	4 1/2	30
RF6300-2	10A	277 VAC	0-400 Hz	28	4 3/4	4 1/2	30
RF6300-3	25A	277 VAC	0-400 Hz	34	4 3/4	4 1/2	40
RF6300-4	50A	277 VAC	0-400 Hz	34	4 3/4	4 1/2	40
RF6300-5	100A	277 VAC	0-400 Hz	40	5	9	90
RF6300-6	150A	277 VAC	0-400 Hz	40	5 1/4	15	140
RF6300-7	200A	277 VAC	0-400 Hz	40	5 1/4	15	140
RF6300-8	400A	277 VAC	0-60 Hz	52	26	10	360

ALL VOLTAGE RATINGS ARE LINE TO GROUND. PARTS RATED AT 277 VAC ARE SUITABLE FOR USE IN A 480 VAC. LINE TO LINE SYSTEM.

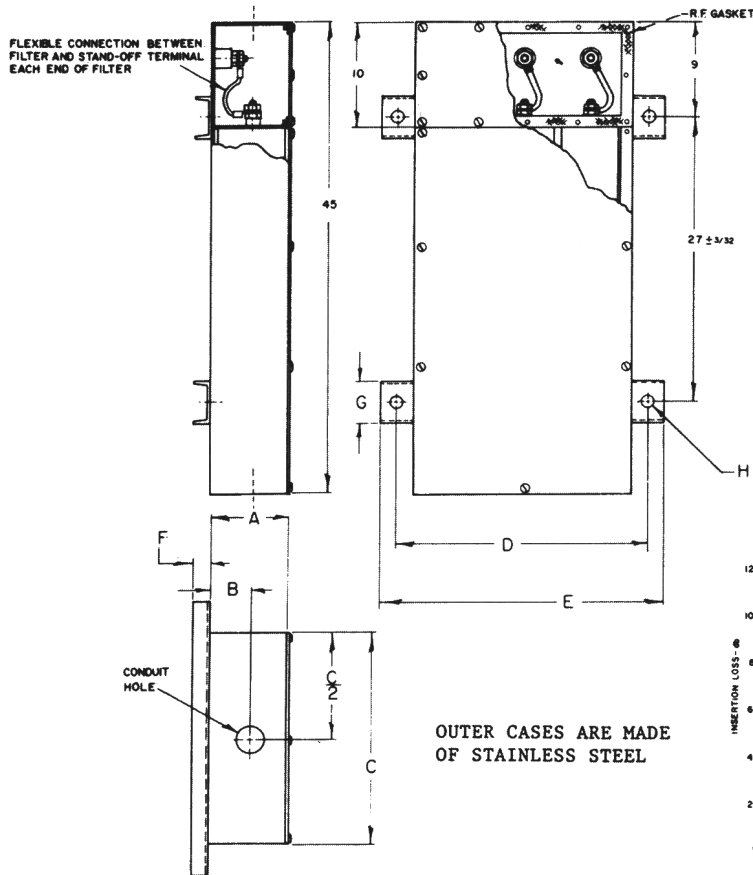
*120 VAC MAX. OPERATING VOLTAGE AT A LINE FREQ. OF 400 Hz.

The RF6300 Series of filters are designed for use on shielded rooms and other areas requiring high insertion loss at frequencies as low as 14 KHz. All filters are hermetically sealed in order to provide reliable, leak-proof service.

Electrical connection to the filter assembly is made by the installer to a flame-retardant plastic stand-off insulator, which is connected by means of a flexible lead to the ceramic filter terminal.

All filters are designed to withstand a surge of ten times rated current

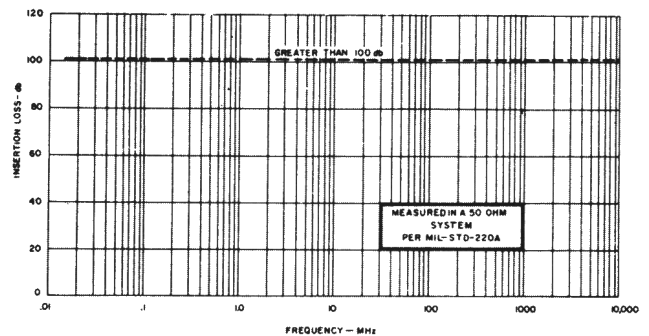
Filters are provided with bleeder resistors installed in order to prevent electrical shock due to accidental discharge of filter capacitors while power is disconnected.



SERIES 3300

POWER LINE FILTER ASSEMBLIES FOR SHIELDED ROOMS AND SECURE AREAS

100 db FROM 14 KHz to 10 GHz
PER MIL-STD-220A, FULL LOAD



RFI PART NO.	CURRENT RATING (AMPERES)	A	B	C	D	E	CONDUIT HOLE	F	G	H	APPROX. WT. (LBS.)
RF 3300-1	2x25	7	4	13	15	17	1 3/8	1 1/2	3	5/8	155
RF 3300-2	3x25	7	4	18	20	22	1 1/2	1 1/2	3	5/8	180
RF 3300-3	4x25	7	4	23	25	27	1 1/2	1 1/2	3	5/8	240
RF 3300-4	2x50	7	4	13	15	17	1 3/4	1 1/2	3	5/8	155
RF 3300-5	3x50	7	4	18	20	22	2	1 1/2	3	5/8	180
RF 3300-6	4x50	7	4	23	25	27	2	1 1/2	3	5/8	240
RF 3300-7	2x75	12	8	15	18	21	2	1 3/4	4	1	280
RF 3300-8	3x75	12	8	20	23	26	2 1/2	1 3/4	4	1	340
RF 3300-9	4x75	12	8	26	29	32	2 1/2	1 3/4	4	1	410
RF 3300-10	2x100	12	8	15	18	21	2	1 3/4	4	1	280
RF 3300-11	3x100	12	8	20	23	26	2 1/2	1 3/4	4	1	340
RF 3300-12	4x100	12	8	26	29	32	2 1/2	1 3/4	4	1	410
RF 3300-13	2x150	18	14	15	18	21	2 1/2	1 3/4	4	1	380
RF 3300-14	3x150	18	14	20	23	26	3	1 3/4	4	1	500
RF 3300-15	4x150	18	14	26	29	32	3	1 3/4	4	1	650
RF 3300-16	2x200	18	14	15	18	21	3	1 3/4	4	1	380
RF 3300-17	3x200	18	14	20	23	26	3	1 3/4	4	1	500
RF 3300-18	4x200	18	14	26	29	32	3	1 3/4	4	1	650

ALL FILTERS ARE RATED FOR A MAXIMUM OF 277 VAC LINE TO GROUND, 480 VAC LINE TO LINE AT POWER LINE FREQUENCIES FROM 0 TO 60 Hz.
 120 VAC MAX. OPERATING VOLTAGE AT 400 Hz.

The RF 3300 Series of filters are designed for use in shielded rooms, secure communications areas and high-powered ground and shipboard electronic installations.

All filters are ruggedly designed and constructed. Filter cases are hermetically sealed for reliable operation.

Electrical connection to the filter assembly is made by the installer to a flame retardant plastic stand-off insulator, which is connected by means of a flexible lead to the ceramic filter terminal.

All three-wire filters are provided with a ground stud mounted through the filter mounting bulkhead, for termination and

continuation of a grounded neutral wire.

Filter cases are of steel construction, and are adequately plated to resist corrosion. RF tight compartments are gasketed with corrosion-resistant metal mesh.

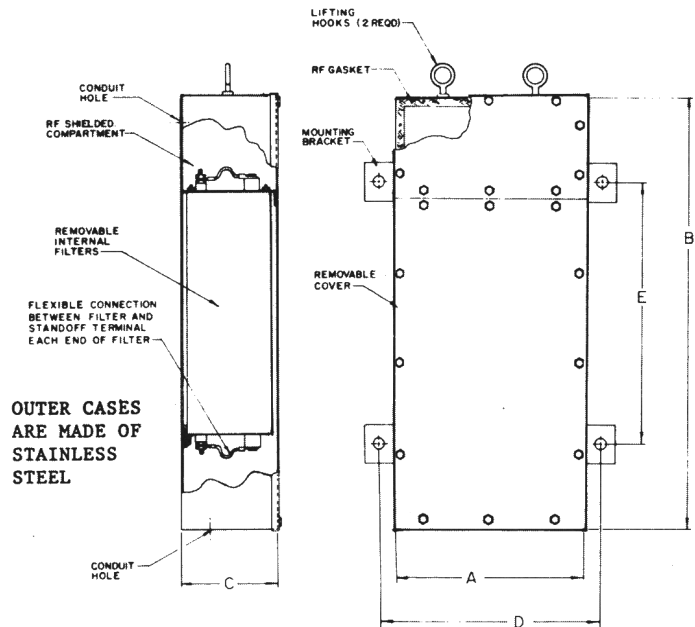
The maximum voltage drop at 60 Hz power line frequency is 2 volts.

Filters are provided with bleeder resistors installed in order to prevent electrical shock due to accidental discharge of filter capacitors while power is disconnected.

SERIES 5200

HIGH CURRENT POWER LINE FILTER ASSEMBLIES FOR SHIELDED ROOMS AND SECURE AREAS

100 db FROM 14 KHz to 10 GHz AT FULL LOAD, USING EXTENDED RANGE BUFFER NETWORKS



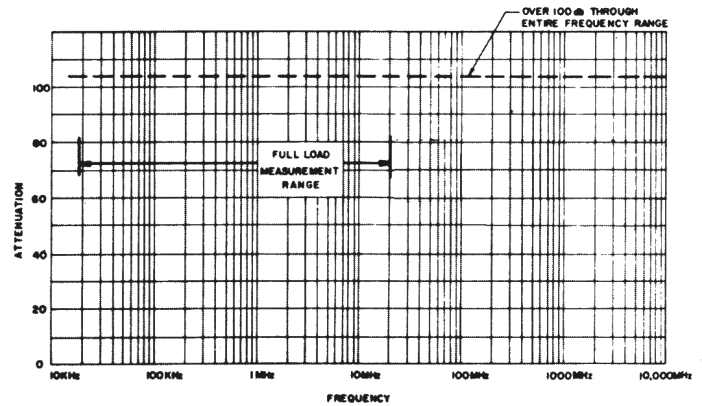
The RF5200 Series of filters are designed for use in shielded rooms, secure communications areas and high-powered ground and shipboard electronic installations.

All filters are ruggedly designed and constructed. The hermetically sealed filter cases are continuously seam welded to assure leakproof construction. Individual units are impregnated with non-flammable material as recognized by Underwriters Laboratories. Electrical connection to the filter assembly is made by the installer to a flame retardent plastic stand-off insulator, which is connected by means of a flexible lead to the ceramic filter terminal.

Filter cases are of steel construction, and are adequately plated to resist corrosion. RF tight compartments are gasketed with corrosion-resistant metal mesh. All cases include grounded neutral terminals. The maximum voltage drop at 60 Hz power line frequency is 2 volts.

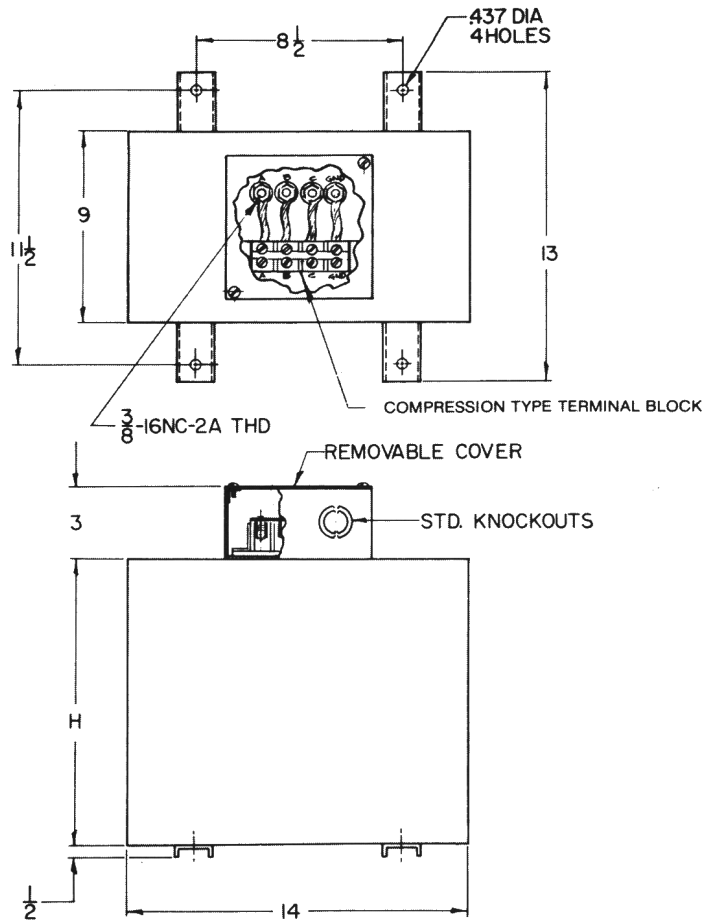
Filters are provided with bleeder resistors installed in order to prevent electrical shock due to accidental discharge of filter capacitors while power is disconnected.

All filters are designed for continuous duty operation at rated conditions, will withstand 140% of rated current for 15 minutes and momentary surges of 10 times rated current.

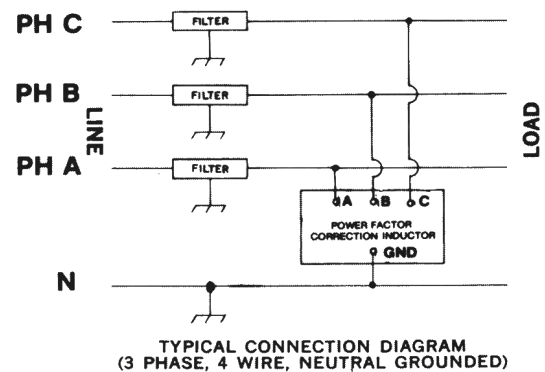


RF1 PART NO.	CURRENT AMPERES	A	B	C	D	E	CONDUIT HOLE DIA.	APPROX. WEIGHT (LBS.)
RF5201-25	25	12¼	37	5	14¼	25	1½	65
RF5202-25	2x25	12¼	37	5	14¼	25	1½	115
RF5203-25	3x25	23	37	5	25	25	1½	170
RF5204-25	4x25	23	37	5	25	25	1½	230
RF5201-50	50	15½	48	11	17½	36	1¾	130
RF5202-50	2x50	15½	48	11	17½	36	1¾	230
RF5203-50	3x50	25	48	11	27	36	1¾	360
RF5204-50	4x50	25	48	11	27	36	1¾	570
RF5201-100	100	16½	60	11	18½	48	2	180
RF5202-100	2x100	16½	60	11	18½	48	2	305
RF5203-100	3x100	25	60	11	27	48	2	470
RF5204-100	4x100	25	60	11	27	48	2	615
RF5201-150	150	17½	60	17	19½	48	2½	290
RF5202-150	2x150	17½	60	17	19½	48	2½	500
RF5203-150	3x150	25	60	17	27	48	2	770
RF5204-150	4x150	25	60	17	27	48	2	1235
RF5201-200	200	17½	60	25	19½	48	3	425
RF5202-200	2x200	17½	60	25	19½	48	3	835
RF5203-200	3x200	25	60	25	27	48	3	1250
RF5204-200	4x200	25	60	25	27	48	3	1400
RF5201-400	400	24	80	30	29	40	3	525
RF5202-400	2x400	24	80	30	29	40	3	1250
RF5203-400	3x400	45	80	30	50	40	3	1775
RF5204-400	4x400	45	80	30	50	40	3	2100

ALL ABOVE FILTERS RATED FOR 0-60Hz POWER LINE FREQUENCIES.
FILTERS FOR 400 Hz POWER ARE AVAILABLE UPON REQUEST.
VOLTAGE RATING: 0-277 VAC LINE-TO-NEUTRAL OR 0-480 VAC LINE-TO-LINE. 600 VDC MAXIMUM.



SERIES 3320 POWER FACTOR CORRECTION INDUCTOR ASSEMBLIES TO REDUCE GENERATOR LOAD CURRENT



POWER FACTOR CORRECTION INDUCTOR PART NO.	USED WITH RFI FILTER PART NO.	APPROX. UNCORRECTED REACTIVE CURRENT (115 VAC 400 Hz) AMPERES	APPROX. CORRECTED REACTIVE CURRENT (115 VAC 400 Hz) AMPERES
RF3320-(*)	RF133, RF134	6	1.5
RF3321-(*)	RF135, RF136 RF6300-1, RF6300-2	9	1.5
RF3322-(*)	RF137, RF138 RF6300-3, RF6300-4	17	2
†RF3323-(*)	RF139 RF6300-5	35	3

*Select dash No. from right hand block based upon application.

*DASH NUMBER	DIMENSION H	APPLICATION
-2	6	Single Phase, One Line Grounded
-3	9	Single Phase, Ungrounded System
-4	12	Three Phase, 4 Wire Neutral Grounded
-5	16	Three Phase, 4 Wire, Ungrounded System

†Size for RF3323-2 is 18x9x10 high — RF3323-3 is 18x9x15 high.
RF3323-4 is 18x9x20 high — RF3323-5 is 18x9x28 high.

Broadband filters of the type used for interference control generally consist of inductors, in series with the power line, and capacitors which are connected (within the filter) from the power line to ground.

These filter capacitors apply a reactive current load to the generator at all times that the filters are connected. In the case of a 400 Hz power source, the filter reactive current can present difficulty to a generator with inadequate reserve capability.

The Power Factor Correction Inductors herein described are designed to minimize the effect of filter reactive loading by providing an inductive load to the generator of equal magnitude as the capacitive load, thus effectively, cancelling the capacitive load current.

Power Factor Correction Inductors can be custom engineered for any application where the capacitive loading value is known.