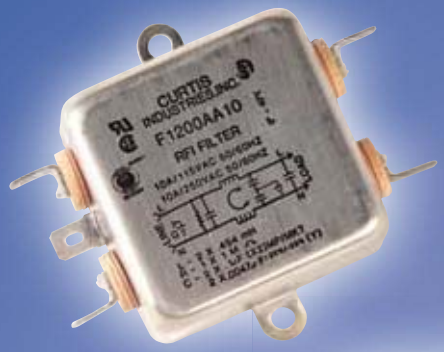
Curtis

We Build Confidence!



RFI Power Line **Filters**

RoHS 2002/95/EC

AN ISO 9001:2000 CERTIFIED COMPANY

Curtis Industries

A Div. of Powers Holdings, Inc.

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Curtis Industries is recognized as a leader in RFI Power Line Filters. We focus on five key areas to insure high quality filters and total customer satisfaction using the latest technology. These key areas include Customer Satisfaction, Design Engineering, Manufacturing, Quality, and On-Time Delivery.

Customer Satisfaction is carried out throughout Curtis. Customer interface with our friendly and knowledgeable Customer Service Representative where all the information needed for order entry, processing, shipping, pricing, and order expediting are immediately available electronically.

Design Engineering is able to create new designs to solve our OEM customer's requirements. Using the Solid Works modeling technology enables our engineers to design the optimum filter or custom control package.

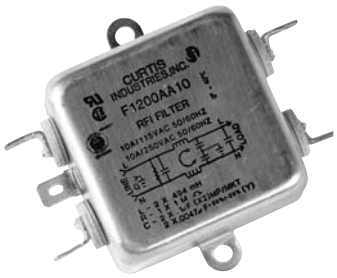
Manufacturing uses proprietary techniques with semi and full automation to build in quality and reduce thru-put. We deliver 99.9% reliable product to meet our customer's quality objectives.

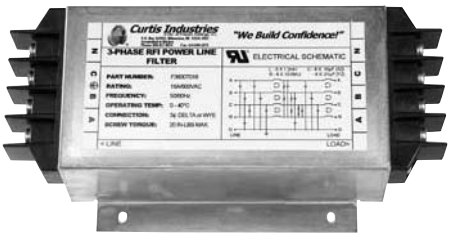
Quality is designed, built in and verified on every filter to the following.

- Hi Pot – DC Line to Line
- Hi Pot – AC Line to Ground
- Current Leakage
- Ground Continuity
- Capacitance Line to Line
- Capacitance Line to Ground
- Inductance Line
- Inductance Ground
- Cross Wiring

On-Time Delivery is a focus for everyone at Curtis which has resulted in an on-time delivery greater than 98% on time.

Contents





Curtis Industries Filter Selection Guide

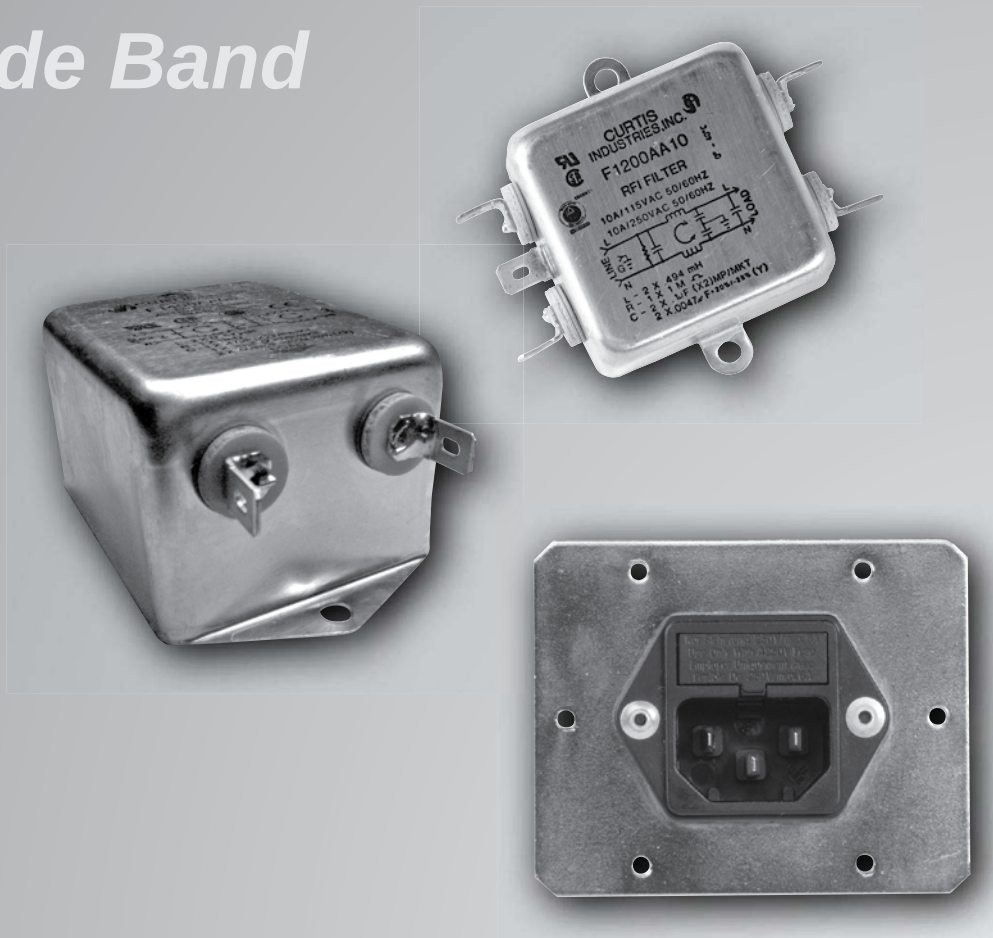
	Filter Series	PERFORMANCE RELATIVE ATTENTUATION		MAXIMUM LEAKAGE CURRENT		PACKAGE/TERMINATION									Catalog Page Number
		Common Mode	Differential Mode	mA @115VAC	mA @250VAC	Wire	Q.C.	I.E.C.	Fused I.E.C.	Volt Select	Switch	P.C. Term	Screw	Solder Term.	
SINGLE PHASE	**F1100/1199**	••	••	0.5	1.0	•	•					•	•	•	4
	F1150	•	•	0.25	0.40	•	•						•	•	4
	F1200/1299	••	••	0.5	1.0	•	•	•					•	•	7
	F1250	•	••	0.25	0.40	•	•						•	•	7
	F1300/1399	••••	••	0.5	1.0	•	•	•				•		•	11
	F1350	•••	••	0.25	0.40	•	•	•				•		•	11
	F1900	•	•	0.25	0.40		•							•	15
	F1400	•••••	••••	0.25	0.40	•	•	•						•	16
	F1500	••••	•••	0.25	0.40		•	•	•					•	18
	F1600	•••••	•••	0.25	0.40		•	•	•			•		•	20
	F1700/1799	••	••••	0.5	1.0	•	•	•					•	•	22
	F1760/1700/1780	••••	••••	0.5	1.0	•	•	•					•	•	24
	F2800	•••••	•••••	0.25	0.50	•	•							•	26
	F5100	••	••	0.25	0.50			•						•	28
	F5200	••	••	0.25	0.50				•					•	30
	F5500	••••	••••	0.25	0.50			•						•	32
	F5600	•••••	••••	0.50	1.20			•						•	34
	F5700	••••	•••••	0.50	1.20			•						•	36
	F5900	•••••	••••	0.50	1.20			•						•	38
POWER ENTRY	**F2199/2200**	•	•	0.25	0.40		•	•						•	44
	F2300 F2300	•••	••	0.25	0.40		•	•						•	45
	F2400/2500	•	•	0.25	0.40		•	•						•	46
	F2600	•	•	0.25	0.40		•	•	•		•	•		•	48
	F2700	•••••	•••••	0.25	0.40	•	•	•	•		•			•	50
	PE7	•	•	0.25	0.40		•		•	•				•	52
	PE8	•	•	0.25	0.40		•		•		•			•	52
	PE1	••	••	0.25	0.40		•		•	•	•			•	56
THREE-PHASE →	**F3480/F3600**	••••	••••				•						•		60
DC FILTERS	**FD00**	(See Section on DC filters for more information)													67
	FD02														68
	FD1														69
	FD2														70
	FD3														70
MEDICAL	**F3099**	•	••	0.002	0.005	•	•							•	72
	F3000/3100/3200/3400/3500	•	••	0.002	0.005		•	•						•	73
	F3300	•	•	0.015	0.025		•	•	•		•	•		•	74
	PM7	•	•	0.002	0.005		•		•	•				•	76
	PM8	•	•	0.002	0.005		•		•		•			•	76
	PM1	••	••	0.002	0.005		•		•	•	•			•	80

SINGLE PHASE FILTERS

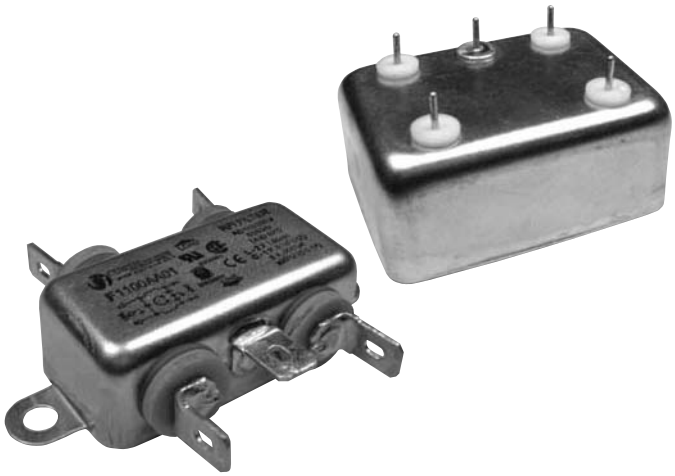
General Performance

High Performance

Wide Band



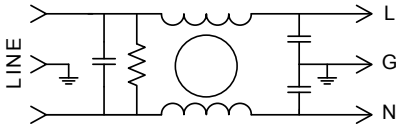
F1100/F1150F/F1199 RFI Filters



Features:

- Most Economical Design
- Designed for General Purpose, Common Mode Applications
- Available in Standard (F1100) and Low-Leakage (F1150) (F1160) (F1170) (F1180) (F1190) (F1199) Models

F1100/F1150/F1199
Simplified Schematic



Nominal Current Rating 115 VAC	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz					
				.15	.50	1.0	5.0	10	30
1A	**F1100AA01** **F1100BB01**	QC/QC Wire/Wire	Common **Differential**	20	35	43	52 **55**	55 **65**	50 **50**
	F1150AA01 **F1150BB01**	QC/QC Wire/Wire	Common **Differential**	20	30	37	50 **55**	50 **65**	50 **50**
	F1199AA01	QC/QC	Common **Differential**	32 **5**	45 **14**	45 **23**	43 **47**	43 **50**	40 **45**
2A	**F1199AA02** **F1199BB02**	QC/QC Wire/Wire	Common **Differential**	24 **5**	35 **13**	43 **16**	45 **45**	45 **50**	40 **45**
3A	**F1100AA03** **F1100BB03** **F1100PP03**	QC/QC Wire/Wire PC/PC	Common **Differential**	20	35	43	52 **55**	55 **64**	50 **46**
	F1150AA03 **F1150BB03**	QC/QC Wire/Wire	Common **Differential**	20	30	37	50 **55**	50 **64**	50 **46**
	F1199AA03 **F1199BB03**	QC/QC Wire/Wire	Common **Differential**	20 **5**	30 **12**	38 **14**	48 **38**	48 **44**	44 **42**
6A	**F1100AA06** **F1100BB06**	QC/QC Wire/Wire	Common **Differential**	10	22 **2**	30 **5**	46 **51**	50 **57**	45 **49**
	F1150AA06 **F1150BB06**	QC/QC Wire/Wire	Common **Differential**	10	20 **2**	27 **5**	45 **51**	45 **57**	45 **49**
	F1199AA06 **F1199BB06**	QC/QC Wire/Wire	Common **Differential**	9 **5**	20 **12**	28 **14**	42 **33**	50 **42**	47 **42**
10A	**F1100AA10** **F1100BB10**	QC/QC Wire/Wire	Common **Differential**	10	22	30 **2**	46 **27**	50 **47**	45 **50**
	F1150AA10 **F1150BB10**	QC/QC Wire/Wire	Common **Differential**	10	20	27 **2**	45 **27**	45 **47**	45 **50**
	F1199AA10 **F1199BB10** **F1199DD10**	QC/QC Wire/Wire Screw/Screw	Common **Differential**	9 **5**	20 **12**	25 **14**	38 **33**	42 **42**	40 **42**
20A	**F1100AA20** **F1100DD20**	QC/QC Screw/Screw	Common **Differential**	8	18	22 **5**	36 **22**	42 **46**	45 **60**
	F1150AA20 **F1150DD20**	QC/QC Screw/Screw	Common **Differential**	8	15	20 **5**	32 **22**	38 **46**	45 **60**
	F1199AA20 **F1199DD20**	QC/QC Screw/Screw	Common **Differential**	10 **5**	20 **12**	28 **15**	35 **30**	38 **40**	40 **40**
30A	**F1199DD30**	Screw/Screw	Common **Differential**	13 **5**	23 **12**	30 **15**	35 **30**	38 **40**	40 **40**

NOTE: Other combinations of terminals may be specified on special order.

Specifications subject to change.
Dimensions are shown for reference purposes only.

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
1A	1A
2A	1.5A
3A	2.5A
6A	4A
10A	6A
20A	10A
30A	15A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

	F1100/F1150	F1199
Line to Ground:	1500VAC	1500VAC
Line to Line:	1768VDC	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect
B: Wire
D: Screw
P: PCB Mount

Maximum Leakage Current:

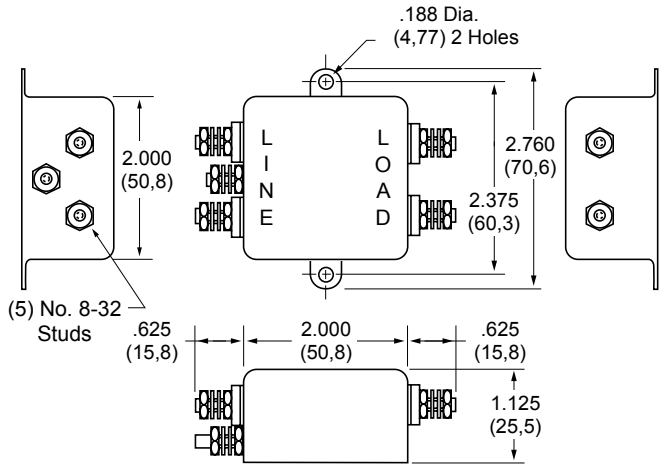
Each Line to Ground	F1100	F1150	F1199
115VAC, 60Hz:	0.40mA	0.25mA	0.25mA
250VAC, 50Hz:	.75mA	0.40mA	0.45mA

Agency Approvals:

	F1100	F1100	F1100
F1150	F1500	Except 20Amp	F1150
F1199	F1199	F1199	F1199

F1100DD/F1150DD

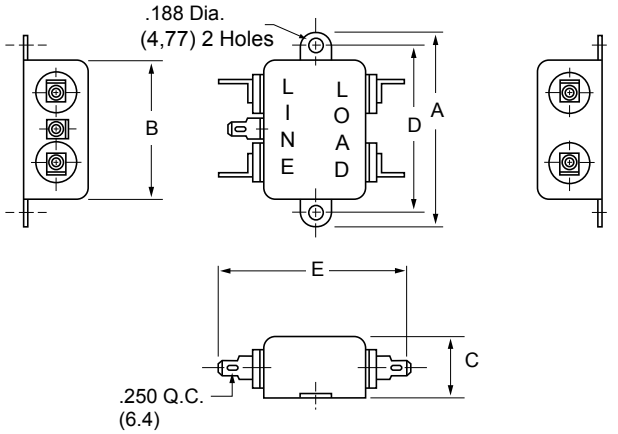
(20Amp Only) Dimensions



F1100AA/F1150AA

(1, 3, 6, 10 and 20Amp) Dimensions

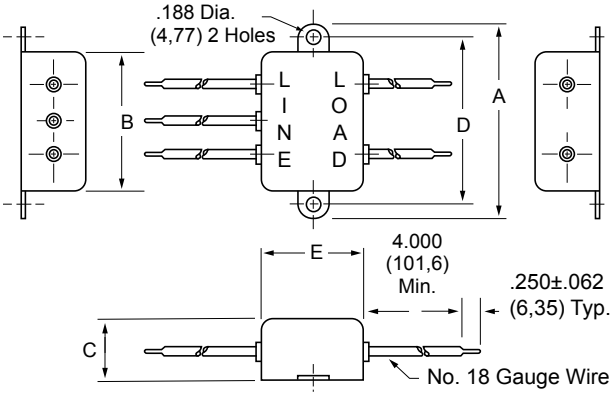
Amps	A	B	C	D	E
1A	2.500 (63,5)	1.750 (44,5)	.625 (15,8)	2.125 (53,9)	1.425 (362)
3A	2.500 (63,5)	1.750 (44,5)	.750 (19,1)	2.125 (53,9)	1.8 (45,8)
6A	2.500 (63,5)	1.750 (44,5)	.750 (19,1)	2.125 (53,9)	1.8 (45,8)
10A	2.500 (63,5)	1.750 (44,5)	1.125 (28,5)	2.125 (53,9)	1.8 (45,8)
20A	2.760 (70,6)	2.000 (60,8)	1.125 (28,5)	2.375 (60,3)	2.550 (64,8)



F1100BB/FB1150BB

(1, 3, 6 and 10Amp) Dimensions

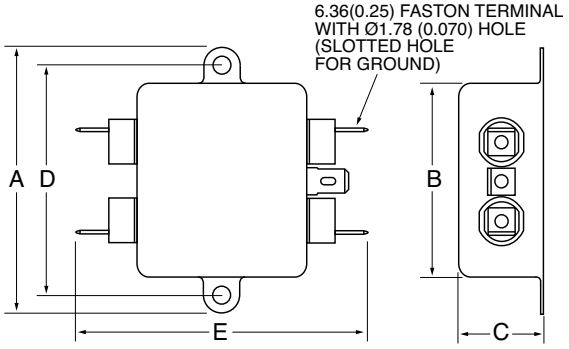
Amps	A	B	C	D	E
1A	2.500 (63,5)	1.750 (44,5)	.625 (15,8)	2.125 (53,9)	.875 (22,2)
3A	2.500 (63,5)	1.750 (44,5)	.750 (19,1)	2.125 (53,9)	1.250 (31,8)
6A	2.500 (63,5)	1.750 (44,5)	.750 (19,1)	2.125 (53,9)	1.250 (31,8)
10A	2.500 (63,5)	1.750 (44,5)	1.125 (28,5)	2.125 (53,9)	1.250 (31,8)



Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

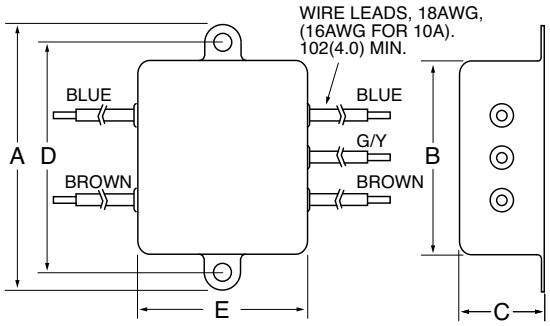
F1199AA (1, 2, 3, 6, 10 and 20Amp) Dimensions

Amps	A	B	C	D	E
1A	2.53 (64,3)	1.82 (46,2)	0.66 (16,8)	2.126 (54,0)	2.25 (57,2)
2A	2.53 (64,3)	1.82 (46,2)	0.66 (16,8)	2.126 (54,0)	2.25 (57,2)
3A	2.53 (64,3)	1.82 (46,2)	0.78 (19,8)	2.126 (54,0)	2.61 (66,3)
6A	2.53 (64,3)	1.82 (46,2)	0.78 (19,8)	2.126 (54,0)	2.61 (66,3)
10A	2.53 (64,3)	1.82 (46,2)	1.16 (29,5)	2.126 (54,0)	2.61 (66,3)
20A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.36 (85,3)



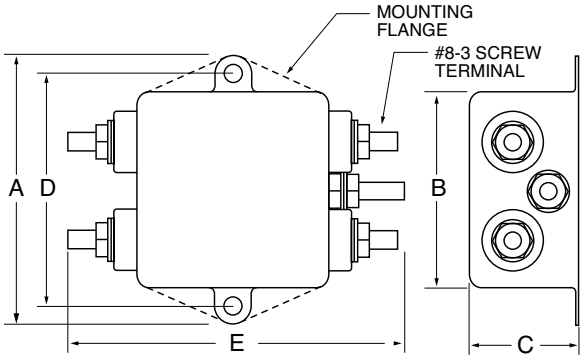
F1199BB (2, 3, 6 and 10Amp) Dimensions

Amps	A	B	C	D	E
2A	2.53 (64,3)	1.82 (46,2)	0.66 (16,8)	2.126 (54,0)	0.96 (24,4)
3A	2.53 (64,3)	1.82 (46,2)	0.78 (19,8)	2.126 (54,0)	1.32 (33,5)
6A	2.53 (64,3)	1.82 (46,2)	0.78 (19,8)	2.126 (54,0)	1.32 (33,5)
10A	2.53 (64,3)	1.82 (46,2)	1.16 (29,5)	2.126 (54,0)	1.32 (33,5)

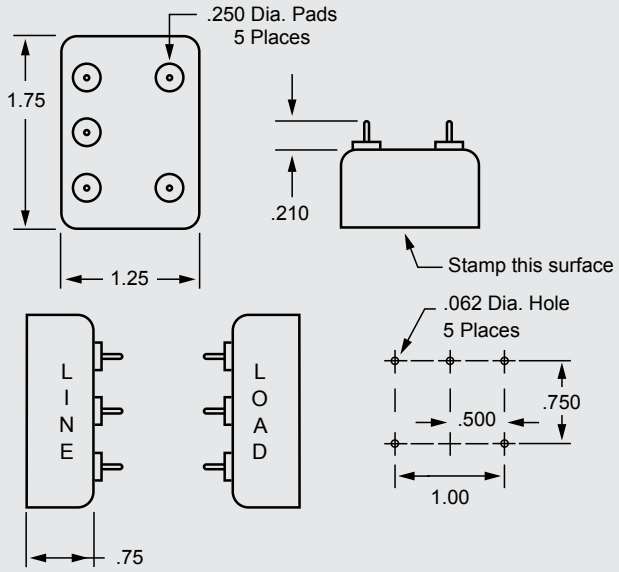


F1199DD (10, 20 and 30Amp) Dimensions

Amps	A	B	C	D	E
10A	2.53 (64,3)	1.82 (46,2)	1.16 (29,5)	2.126 (54,0)	2.72 (69,1)
20A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.46 (87,9)
30A	4.20 (106,7)	3.38 (85,9)	1.53 (38,9)	3.75 (95,25)	5.34 (135,6)



F1100PP Recommended PC Mounting



Specifications subject to change.
Dimensions are shown for
reference purposes only.

F1200/F1250/F1299 RFI Filters

Features:

- Designed for General Purpose Common Mode and Differential Mode Applications
- Higher Line-to-Line Capacitance for Protection from Pulsed, Intermittent, or Continuous RFI
- Available in Standard (F1200) and Low-Leakage (F1250) (F1260) (F1270) (F1280) (F1299) Models
- Available with Integral IEC Connector up to 10Amps

Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz					
				.15	.50	1.0	5.0	10	30
1A	**F1200AA01** **F1200BB01**	QC/QC Wire/Wire	Common **Differential**	20 **4**	35 **38**	43 **59**	52 **66**	55 **62**	50 **54**
	F1250AA01 **F1250BB01**	QC/QC Wire/Wire	Common **Differential**	20 **4**	30 **38**	37 **59**	50 **66**	50 **62**	50 **54**
2A	**F1299AA02** **F1299BB02**	QC/QC Wire/Wire	Common **Differential**	24 **6**	35 **35**	43 **50**	45 **55**	45 **50**	40 **45**
3A	**F1200AA03** **F1200BB03** **F1200CA03**	QC/QC Wire/Wire IEC/QC	Common **Differential**	20 **4**	35 **38**	43 **59**	52 **70**	55 **64**	50 **59**
	F1250AA03 **F1250BB03** **F1250CA03**	QC/QC Wire/Wire IEC/QC	Common **Differential**	20 **4**	30 **38**	37 **59**	50 **70**	50 **64**	50 **59**
	F1299AA03 **F1299BB03** **F1299CA03**	QC/QC Wire/Wire IEC/QC	Common **Differential**	26 **6**	37 **40**	45 **55**	45 **55**	45 **50**	40 **45**
6A	**F1200AA06** **F1200BB06** **F1200CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	10 **9**	22 **25**	30 **48**	46 **70**	50 **70**	45 **62**
	F1250AA06 **F1250BB06** **F1250CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	10 **9**	20 **25**	27 **48**	45 **70**	45 **70**	45 **62**
	F1299AA06 **F1299BB06** **F1299CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	20 **6**	31 **35**	40 **50**	45 **55**	45 **50**	40 **45**
10A	**F1200AA10** **F1200BB10** **F1200CA10**	QC/QC Wire/Wire IEC/QC	Common **Differential**	10 **10**	22 **16**	30 **43**	46 **70**	50 **70**	45 **66**
	F1250AA10 **F1250BB10** **F1250CA10**	QC/QC Wire/Wire IEC/QC	Common **Differential**	10 **10**	20 **16**	27 **43**	45 **70**	45 **70**	45 **66**
	F1299AA10 **F1299BB10** **F1299CA10** **F1299DD10**	QC/QC Wire/Wire IEC/QC Screw/Screw	Common **Differential**	9 **14**	20 **14**	25 **38**	38 **50**	42 **48**	40 **45**
20A	**F1200AA20** **F1200DD20**	QC/QC Screw/Screw	Common **Differential**	10 **9**	22 **19**	30 **44**	42 **70**	47 **70**	40 **70**
	F1250AA20 **F1250DD20**	QC/QC Screw/Screw	Common **Differential**	10 **9**	20 **19**	25 **44**	38 **70**	40 **70**	40 **70**
	F1299AA20 **F1299DD20**	QC/QC Screw/Screw	Common **Differential**	10 **14**	20 **14**	28 **38**	35 **50**	38 **48**	40 **45**
30A	**F1200DD30**	Screw/Screw	Common **Differential**	7 **11**	15 **13**	20 **44**	34 **70**	42 **60**	40 **57**
	F1299DD30	Screw/Screw	Common **Differential**	12 **15**	23 **40**	30 **55**	35 **55**	38 **55**	40 **50**

NOTE: Other combinations of terminals may be specified on special order.

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	1A	2A	3A	6A	10A	20A	30A
250VAC	1A	1.5A	2.5A	4A	6A	10A	15A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):	**F1200 Series**	**F1299 Series**
Line to Ground:	1500VAC	1500VAC
Line to Line:	1768VDC	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect
B: Wire
C: IEC Receptacle
D: Screw

Maximum Leakage Current:

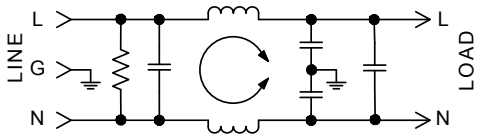
Each Line to Ground	**F1200**	**F1250**	**F1299**	**F1260**	**F1270**	**F1280**	**F1299**
115VAC, 60Hz:	0.40mA	0.25mA	.15mA	.25mA	.002mA	.015mA	.030mA
250VAC, 50Hz:	.75mA	.40mA	.25mA	.45mA	.005mA	.025mA	.050mA

Agency Approvals F1200:

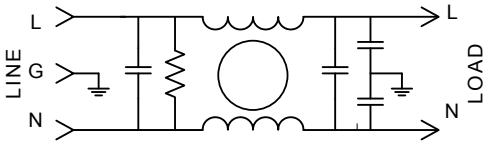
Except 30Amp

Agency Approvals F1299:

F1200/F1250 Simplified Schematic

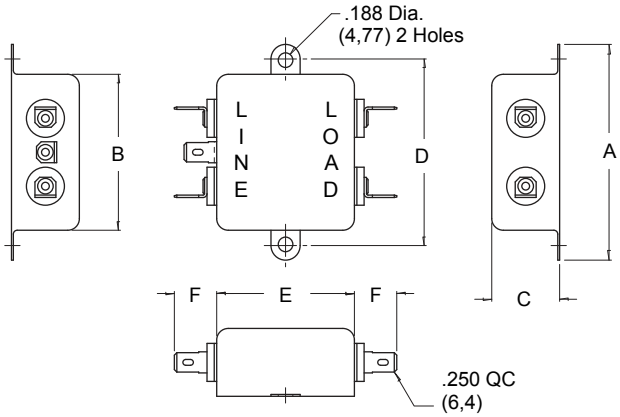


F1299 Simplified Schematic



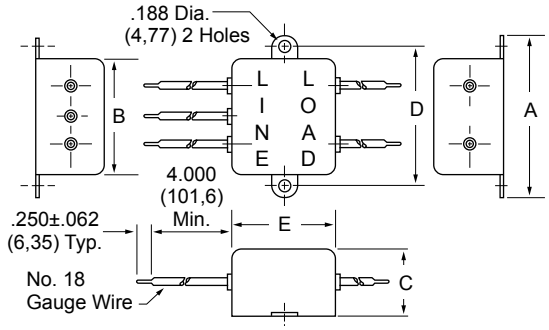
F1200AA/F1250AA (1, 3, 6, 10 and 20Amp) Dimensions

Amps	A	B	C	D	E	F
1A	2.750 (69,9)	2.00 (50,8)	.875 (22,2)	2.375 (60,3)	1.750 (44,5)	.550 (14,0)
3A	2.750 (69,9)	2.00 (50,8)	1.125 (28,5)	2.375 (60,3)	1.750 (44,5)	.550 (14,0)
6A	2.750 (69,9)	2.00 (50,8)	1.125 (28,5)	2.375 (60,3)	1.750 (44,5)	.550 (14,0)
10A	2.750 (69,9)	2.00 (50,8)	1.125 (28,5)	2.375 (60,3)	2.000 (50,8)	.550 (14,0)
20A	3.310 (84,1)	2.50 (63,5)	1.500 (38,1)	2.940 (74,7)	2.000 (50,8)	.550 (14,0)



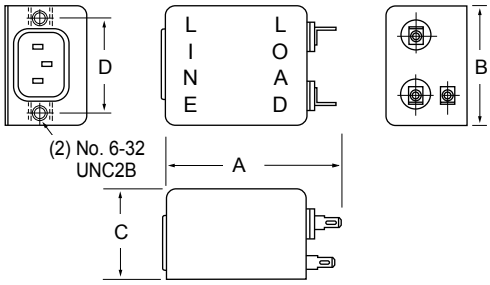
F1200BB/FB1250BB (1, 3, 6 and 10Amp) Dimensions

Amps	A	B	C	D	E
1A	2.750 (69,9)	2.00 (50,8)	.875 (22,2)	2.375 (60,3)	1.750 (44,5)
3A	2.750 (69,9)	2.00 (50,8)	1.125 (28,5)	2.375 (60,3)	1.750 (44,5)
6A	2.750 (69,9)	2.00 (50,8)	1.125 (28,5)	2.375 (60,3)	1.750 (44,5)
10A	2.750 (69,9)	2.00 (50,8)	1.125 (28,5)	2.375 (60,3)	2.000 (50,8)



Specifications subject to change.
Dimensions are shown for reference purposes only.

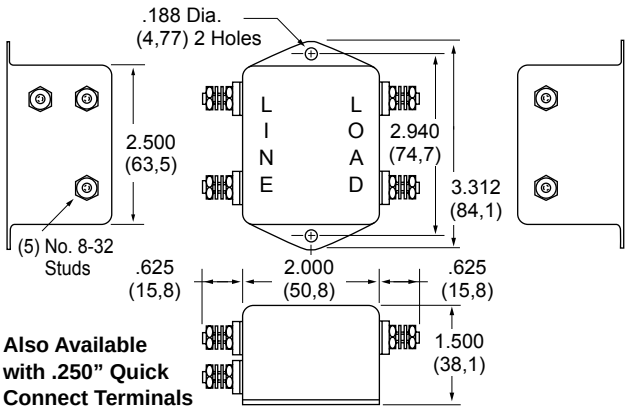
F1200CA/F1250CA (3, 6, and 10Amp) Dimensions



Refer to Page 36 for Standard Mounting Cutouts

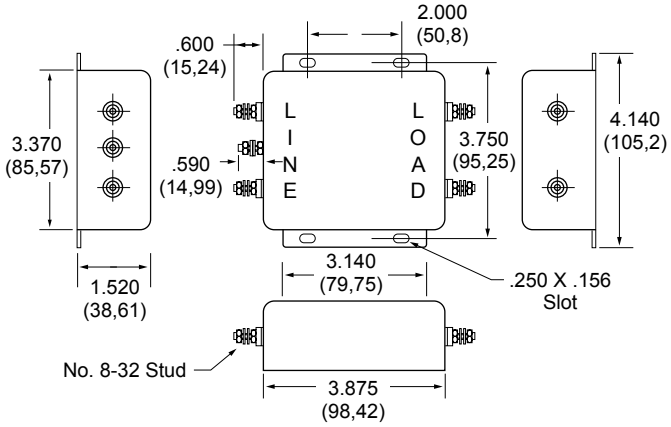
Amps	A	B	C	D
3A	2.55 (64,8)	2.000 (50,8)	1.50 (38,1)	1.575 (40,0)
6A	3.05 (77,5)	2.000 (50,8)	1.500 (38,1)	1.575 (40,0)
10A	3.05 (77,5)	2.000 (50,8)	1.500 (38,1)	1.575 (40,0)

F1200DD/F1250DD
(20Amp Only) Dimensions



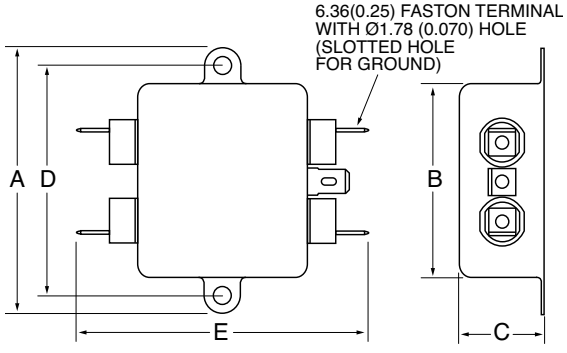
Also Available with .250" Quick Connect Terminals

F1200DD30
(30Amp Only) Dimensions



F1299AA (2, 3, 6, 10 and 20Amp) Dimensions

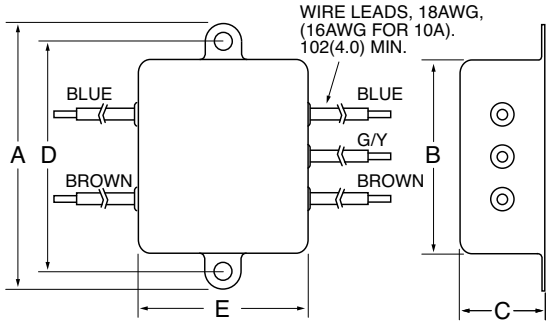
Amps	A	B	C	D	E
2A	2.81 (71,4)	2.07 (52,6)	0.91 (23,1)	2.375 (60,33)	3.10 (78,7)
3A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.10 (78,7)
6A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.10 (78,7)
10A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.35 (85,1)
20A	3.35 (85,1)	2.56 (65,0)	1.53 (38,9)	2.938 (74,63)	3.35 (85,1)



Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

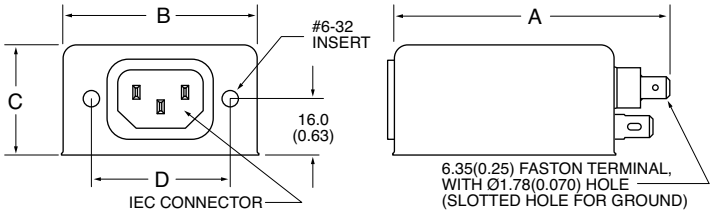
F1299BB (2, 3, 6 and 10Amp) Dimensions

Amps	A	B	C	D	E
2A	2.81 (71,4)	2.07 (52,6)	0.91 (23,1)	2.375 (60,33)	1.81 (46,0)
3A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.10 (78,7)
6A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.10 (78,7)
10A	2.81 (71,4)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	2.07 (52,6)



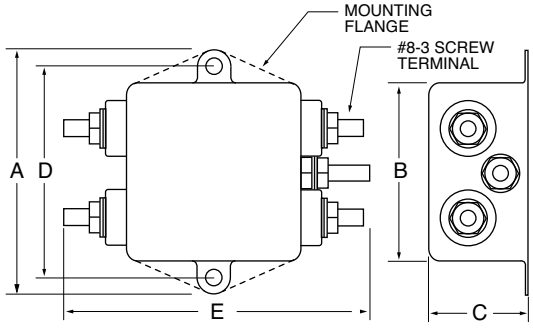
F1299CA (3, 6 and 10Amp) Dimensions

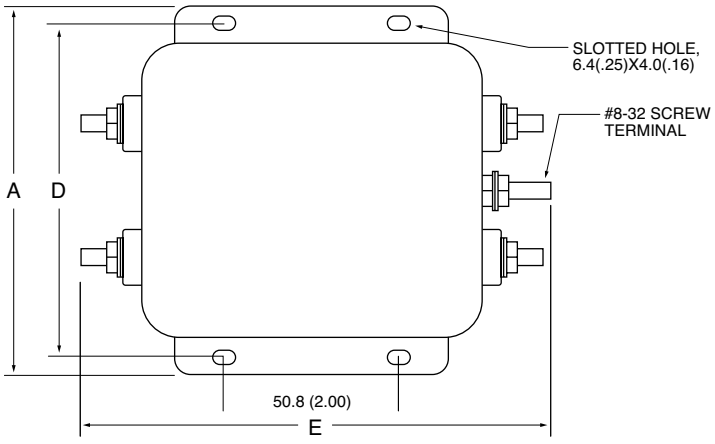
Amps	A	B	C	D
3A	3.21 (81,5)	2.25 (57,2)	1.28 (32,5)	1.575 (40,0)
6A	3.21 (81,5)	2.25 (57,2)	1.28 (32,5)	1.575 (40,0)
10A	3.71 (94,2)	2.25 (57,2)	1.28 (32,5)	1.575 (40,0)

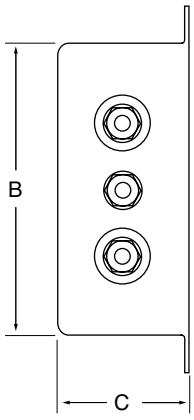


F1299DD (10, 20 and 30Amp) Dimensions

Amps	A	B	C	D	E
10A	2.81 (71,40)	2.07 (52,6)	1.16 (29,5)	2.375 (60,33)	3.46 (87,9)
20A	3.35 (85,1)	2.56 (65,0)	1.53 (38,9)	2.938 (74,63)	3.46 (87,9)
30A	4.20 (106,7)	3.38 (85,9)	1.53 (38,9)	3.750 (95,25)	5.34 (135,6)







Specifications subject to change.
Dimensions are shown for
reference purposes only.

F1300/F1350/F1399 RFI Filters

Features:

- T Circuit Configuration—Designed for Motor, Capacitive and Other Low Impedance Loads
- Dual Coils — Higher Performance in Unknown RFI and Noise Susceptibility Applications
- Integral IEC Connector and PC Mounted Versions Now Available

Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz					
				.15	.50	1.0	5.0	10	30
1A	**F1300AA01** **F1300BB01**	QC/QC Wire/Wire	Common **Differential**	40 **2**	65 **57**	65 **69**	65 **70**	65 **70**	65 **60**
	F1350AA01 **F1350BB01**	QC/QC Wire/Wire	Common **Differential**	30 **2**	60 **57**	65 **69**	65 **70**	65 **70**	65 **60**
2A	**F1399AA02** **F1399BB02**	QC/QC Wire/Wire	Common **Differential**	40 **5**	65 **45**	65 **70**	65 **65**	65 **60**	40 **50**
3A	**F1300AA03** **F1300BB03** **F1300CA03** **F1300CP03**	QC/QC Wire/Wire IEC/QC IEC/PC	Common **Differential**	40 **7**	65 **64**	65 **70**	65 **70**	65 **70**	65 **58**
	F1350AA03 **F1350BB03** **F1350CA03** **F1350CP03**	QC/QC Wire/Wire IEC/QC IEC/PC	Common **Differential**	30 **7**	60 **64**	65 **70**	65 **70**	65 **70**	65 **58**
	F1399AA03 **F1399BB03** **F1399CA03**	QC/QC Wire/Wire IEC/QC	Common **Differential**	40 **12**	65 **55**	65 **70**	65 **65**	65 **60**	40 **50**
6A	**F1300AA06** **F1300BB06** **F1300CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	12 **10**	48 **40**	60 **70**	65 **70**	65 **70**	65 **60**
	F1350AA06 **F1350BB06** **F1350CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	2 **10**	40 **40**	60 **70**	65 **70**	65 **70**	65 **60**
	F1399AA06 **F1399BB06** **F1399CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	30 **5**	55 **40**	65 **70**	65 **65**	65 **60**	40 **50**
10A	**F1300AA10** **F1300BB10** **F1300CA10**	QC/QC Wire/Wire IEC/QC	Common **Differential**	12 **13**	48 **13**	60 **64**	65 **70**	65 **67**	65 **56**
	F1350AA10 **F1350BB10**	QC/QC Wire/Wire	Common **Differential**	2 **13**	40 **13**	60 **64**	65 **70**	65 **67**	65 **56**
	F1399AA10 **F1399BB10** **F1399CA10** **F1399DD10**	QC/QC Wire/Wire IEC/QC Screw/Screw	Common **Differential**	5 **5**	40 **12**	52 **50**	60 **65**	60 **60**	50 **55**
15A	**F1300AA15**	QC/QC	Common **Differential**	14 **15**	35 **10**	44 **45**	56 **70**	58 **67**	55 **56**
20A	**F1300AA20**	QC/QC	Common **Differential**	5 —	44 —	60 **35**	65 **60**	65 **57**	60 **45**
	F1350AA20	QC/QC	Common **Differential**	2 —	35 —	61 **35**	63 **60**	60 **57**	50 **45**
	F1399AA20 **F1399DD20**	QC/QC Screw/Screw	Common **Differential**	5 **5**	40 **12**	52 **50**	60 **65**	60 **60**	52 **55**

NOTE: Other combinations of terminals may be specified on special order.

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	1A	2A	3A	6A	10A	15A	20A
250VAC	1A	1.5A	2.5A	4A	6A	15A	16A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min): **F1300/F1350**
Line to Ground: 1500VAC
Line to Line: 1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination: A: QC – Quick Connect C: IEC Receptacle
B: Wire P: PC – P.C. Board

Maximum Leakage Current:

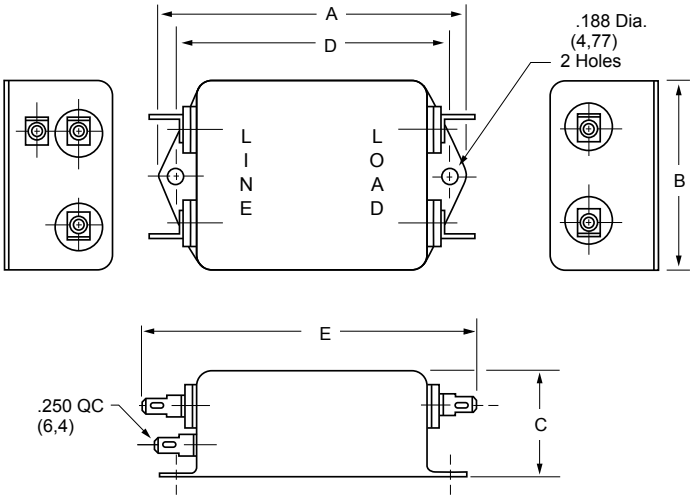
Each Line to Ground	F1300	F1350	D1399	F1360	F1370	F1380	F1390
115VAC, 60Hz:	0.4mA	0.25mA	0.25mA	.15mA	.002mA	.015mA	.030mA
250VAC, 50Hz:	.75mA	.40mA	0.45mA	.25mA	.005mA	.025mA	.050mA

Agency Approvals:

Except 15Amp

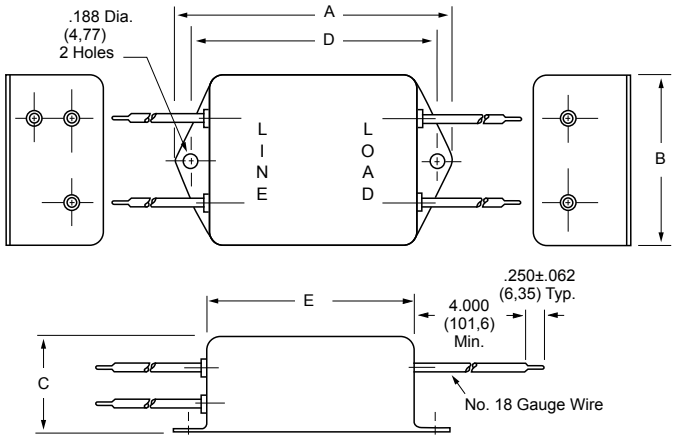
F1300AA (1, 3, 6, 10 and 15Amp)
F1350AA (1, 3, 6 and 10Amp) Dimensions

Amps	A	B	C	D	E
1A	2.750 (69,9)	1.750 (44,5)	1.125 (28,5)	2.375 (60,3)	2.925 (74,3)
3A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	3.49 (88,7)
6A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	3.49 (88,7)
10A	3.312 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	3.49 (88,7)
15A	3.312 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	3.49 (88,7)



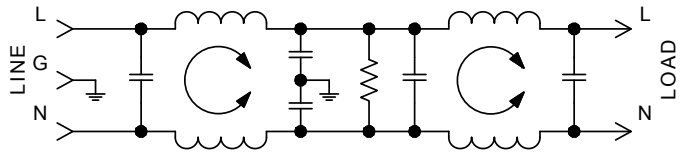
F1300BB/F1350BB
(1, 3, 6 and 10Amp) Dimensions

Amps	A	B	C	D	E
1A	2.750 (69,9)	1.750 (44,5)	1.125 (28,5)	2.375 (60,3)	2.000 (50,8)
3A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	2.500 (63,5)
6A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	2.500 (63,5)
10A	3.312 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	2.500 (63,5)



Specifications subject to change.
Dimensions are shown for reference purposes only.

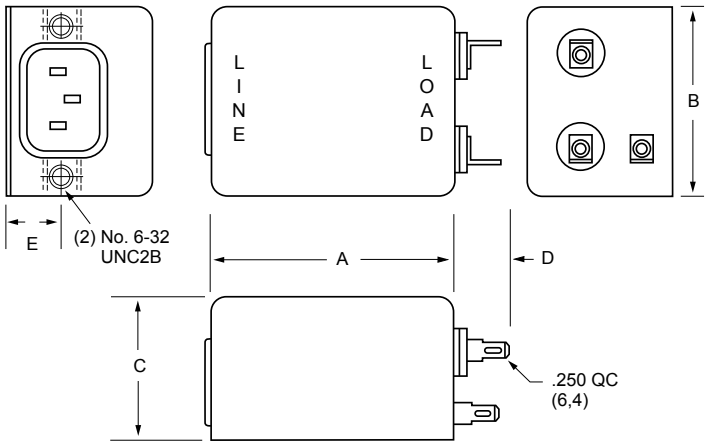
F1300/F1350 Simplified Schematic

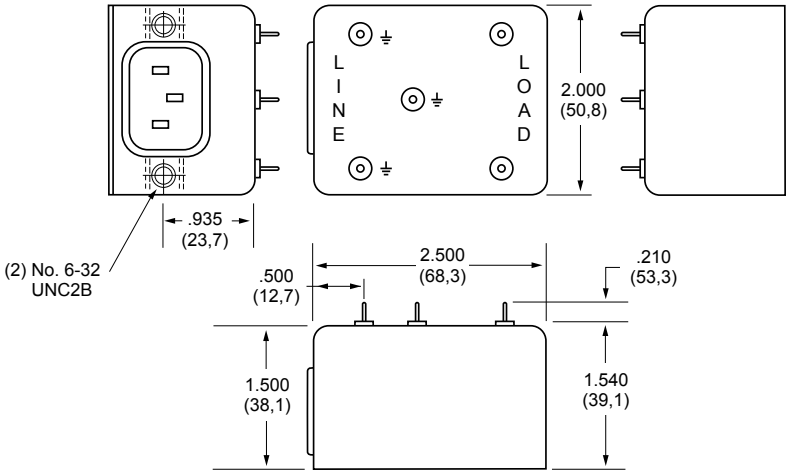


F1300CA (3, 6 and 10Amp)
F1350CA (3 and 6Amp) Dimensions

Refer to Page 40 for Standard Mounting Cutouts

Amps	A	B	C	D	E
3A	2.500 (63,6)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
6A	2.500 (63,5)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
10A	2.880 (73,1)	2.120 (53,8)	1.500 (38,1)	.65 (16,0)	.565 (14,3)

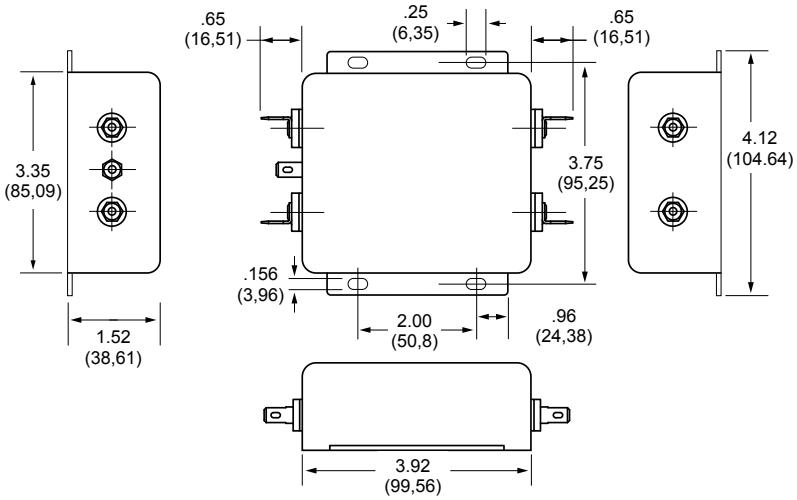




F1300CP/F1350CP
(3Amp Only) Dimensions

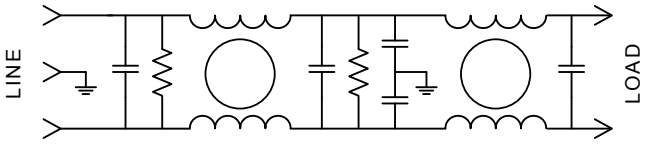
Refer to Page 40 for Standard Mounting Cutouts

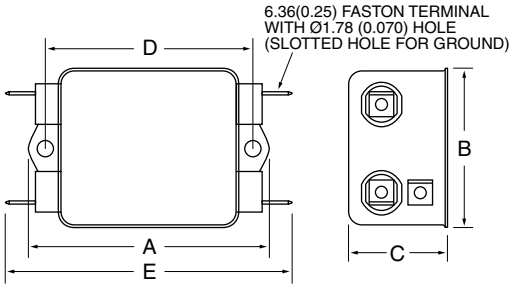
F1300AA/F1350AA
(20Amp Only) Dimensions



Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F1399 Simplified Schematic



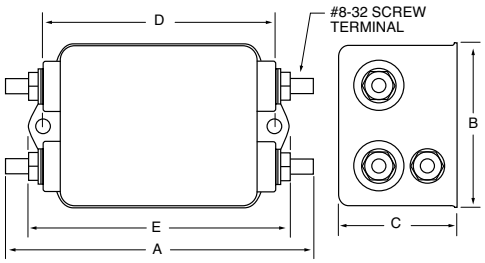


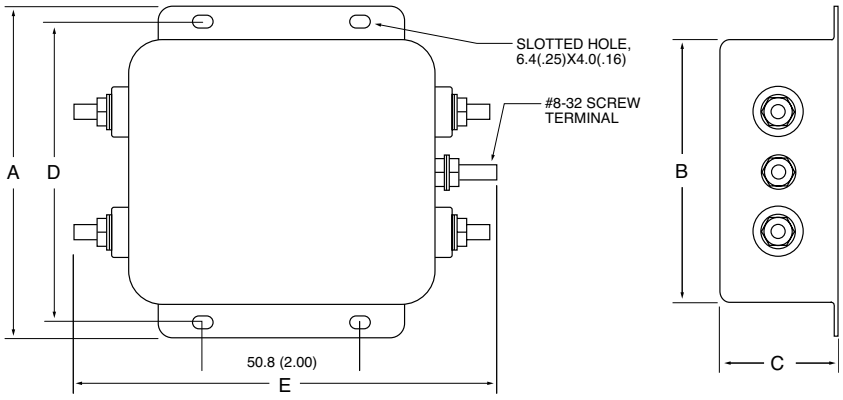
F1399AA (2, 3, 6, 10 and 20Amp) Dimensions

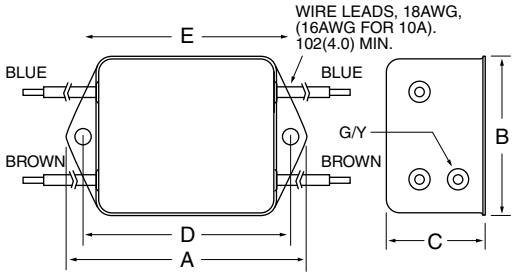
Amps	A	B	C	D	E
2A	3.35 (85,1)	1.81 (46,0)	1.16 (29,5)	2.375 (60,33)	2.78 (70,6)
3A	3.85 (97,8)	2.07 (52,6)	1.16 (29,5)	2.938 (74,63)	3.35 (85,1)
6A	3.85 (97,8)	2.07 (52,6)	1.16 (29,5)	2.938 (74,63)	3.35 (85,1)
10A	3.85 (97,8)	2.07 (52,6)	1.53 (38,9)	2.938 (74,63)	3.35 (85,1)
20A	5.23 (132,8)	3.37 (85,6)	1.53 (38,9)	3.75 (95,25)	4.20 (106.7)

F1399DD (10 and 20Amp) Dimensions

Amps	A	B	C	D	E
10A	3.96 (100,6)	2.07 (52,6)	1.53 (38,9)	2.938 (74,63)	3.35 (85,1)
20A	5.34 (135,6)	3.37 (85,6)	1.53 (38,9)	3.75 (95,25)	4.20 (106,7)

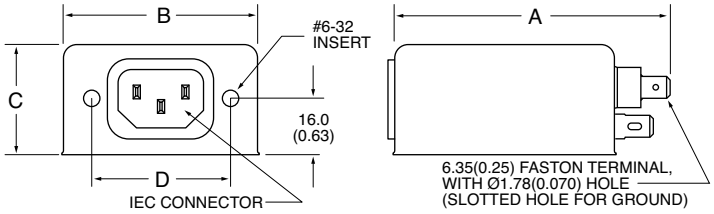






F1399BB (2, 3, 6 and 10Amp) Dimensions

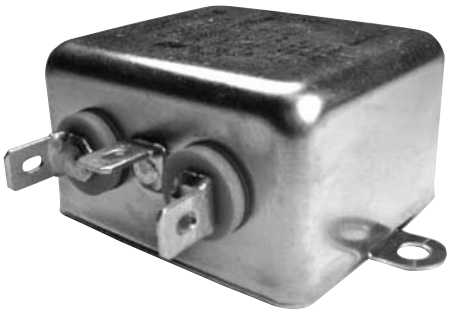
Amps	A	B	C	D	E
2A	2.07 (52.6)	1.81 (46,0)	1.16 (29,5)	2.375 (60,33)	2.78 (70,6)
3A	2.56 (65,0)	2.07 (52,6)	1.16 (29,5)	2.938 (74,63)	3.35 (85.1)
6A	2.56 (65,0)	2.07 (52,6)	1.16 (29,5)	2.938 (74,63)	3.35 (85.1)
10A	2.56 (65,0)	2.07 (52,6)	1.53 (38,9)	2.938 (74,63)	3.35 (85,1)



F1399CA (3, 6 and 10Amp) Dimensions

Amps	A	B	C	D
3A	4.33 (110,0)	2.25 (57,2)	1.28 (32,5)	1.575 (40,0)
6A	4.33 (110,0)	2.25 (57,2)	1.28 (32,5)	1.575 (40,0)
10A	4.33 (110,0)	2.25 (57,2)	1.53 (38,9)	1.575 (40,0)

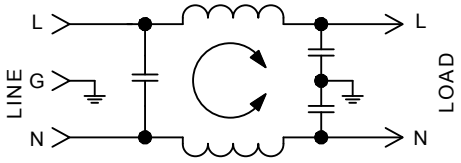
Specifications subject to change.
Dimensions are shown for
reference purposes only.



Features:

- Designed for Equipment Requiring UL1410 Approval (Consumer Electronics)
- Utilizes UL1414 Approved Components
- Greater Differential Mode Protection

F1900 Simplified Schematic

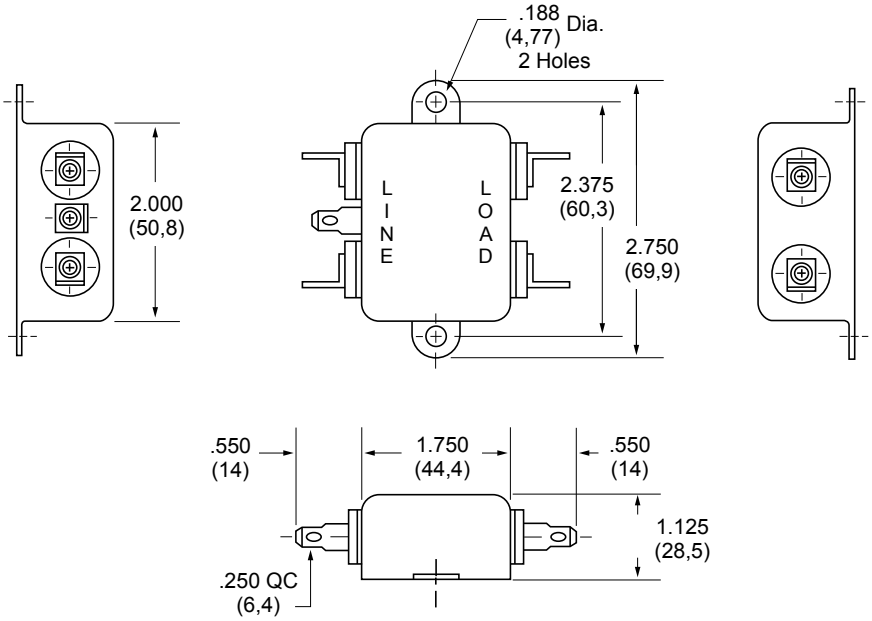


Specifications:

Rated Voltage: 125VAC Maximum - 50/60 Hz
Rated Current: 120VAC
3A
6A
Current Overload: 6X for 8 seconds
Hi-Pot Test (1 min):
Line to Ground 1500VAC
Line to Line 1768VDC
Insulation Resistance: 9 x 10^9 Ω at 100VDC
Ambient Temperature: 40°C Max. at rated urrent
Humidity Range: 0% to 95% R.H.
Termination:
A: QC – Quick Connect
Maximum Leakage Current:
Each Line to Ground **F1900**
115VAC, 60Hz: 0.25mA
Agency Approvals:

F1900AA

(3 and 6Amp) Dimensions



Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F1900AA03**	QC/QC	Common	20	30	37	50	50	50
			Differential	**7**	**19**	**28**	**50**	**57**	**70**
6A	**F1900AA06**	QC/QC	Common	10	20	27	45	45	45
			Differential	**8**	**18**	**24**	**45**	**52**	**64**

NOTE: Other combinations of terminals may be specified on special order.

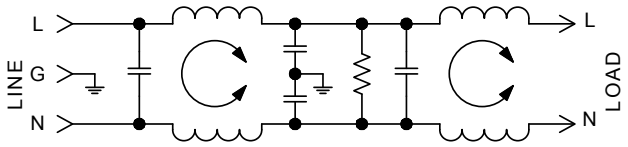
Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F1400 RFI Filters

Features:

- High Peak Current Design — High Insertion Loss for Switching Power Supply Emissions
- Low-Leakage Current
- Compact Case Sizes in 6 and 10Amp Models
- Available with Integral IEC Connector in 3 and 6Amp Models

F1400 Simplified Schematic



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	4A
10A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect
B: Wire
C: IEC Receptacle

Maximum Leakage Current:

Each Line to Ground	**F1400**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

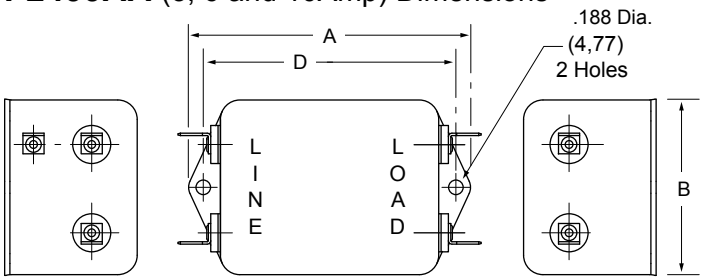
Agency Approvals:

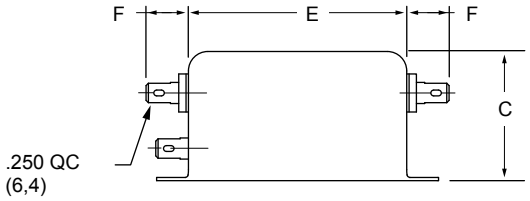
Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F1400AA03** **F1400BB03** **F1400CA03**	QC/QC Wire/Wire IEC/QC	Common **Differential**	58 **40**	65 **60**	65 **65**	65 **65**	60 **65**	44 **60**
6A	**F1400AA06** **F1400BB06** **F1400CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	58 **36**	65 **55**	65 **60**	65 **60**	60 **55**	54 **50**
10A	**F1400AA10** **F1400BB10**	QC/QC Wire/Wire	Common **Differential**	56 **40**	65 **50**	65 **60**	65 **65**	60 **65**	54 **60**

NOTE: Other combinations of terminals may be specified on special order.

Specifications subject to change.
Dimensions are shown for reference purposes only.

F1400AA (3, 6 and 10Amp) Dimensions

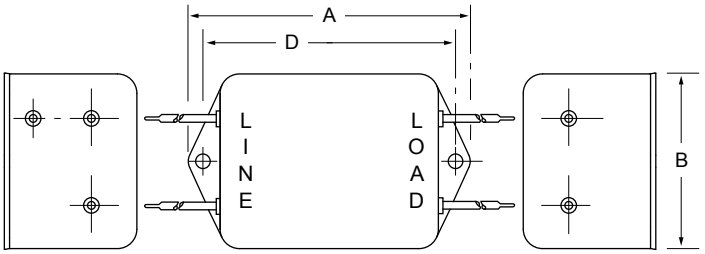


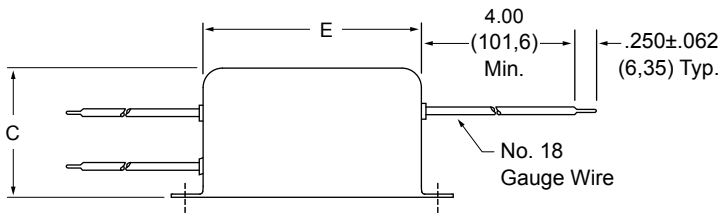


Amps	A	B	C	D	E	F
3A	3.310 (84,1)	2.000 (50,8)	1.500 (38,2)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
6A	3.310 (84,1)	2.000 (50,8)	1.500 (38,2)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
10A	4.70 (119,4)	2.250 (57,1)	1.750 (44,4)	4.250 (107,9)	3.750 (95,3)	.550 (14,0)

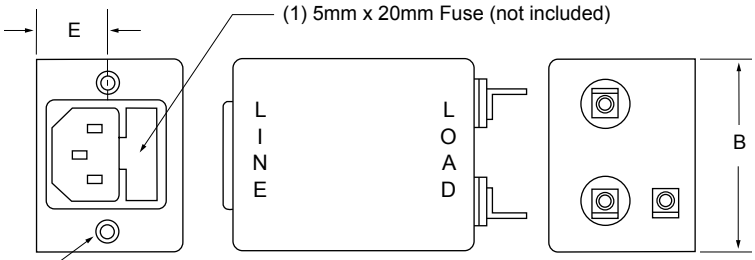
F1400BB (3, 6 and 10Amp) Dimensions

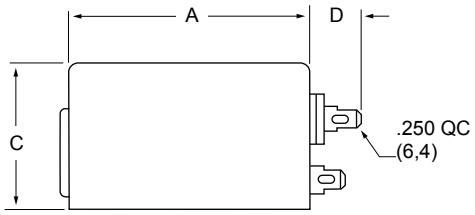
Amps	A	B	C	D	E
3A	3.310 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	2.500 (63,5)
6A	3.310 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	2.500 (63,5)
10A	4.70 (119,4)	2.250 (57,1)	1.750 (44,4)	4.250 (107,9)	3.750 (95,3)





F1400CA (3 and 6Amp) Dimensions





Refer to Page 40 for Standard Mounting Cutouts

Amps	A	B	C	D	E
3A	2.880 (73,1)	2.120 (53,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
6A	2.880 (73,1)	2.120 (53,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F1500 RFI Filters

Features:

- IEC Connector Plus Common and Differential Mode Performance in Compact Case
- "L" Circuit Configuration — Cost-Effective in Many Linear and Switching Power Supply Applications
- High-Inductance Design for Greater Attenuation
- Available with 0.250" Quick Connect Terminals or Wire Leads on the Load Side

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	3A
10A	6A
15A	8A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect
B: Wire
C: IEC Receptacle
F: IEC Receptacle with Fuse Holder

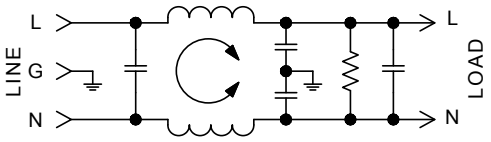
Maximum Leakage Current:

Each Line to Ground	**F1500**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

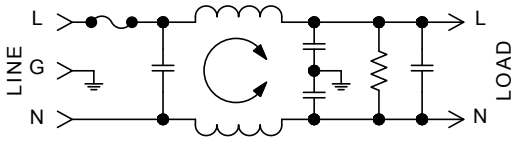
Agency Approvals:

Except Quick Connect Termination on Line Input

F1500AX/F1500CX Simplified Schematic



F1500FX Simplified Schematic



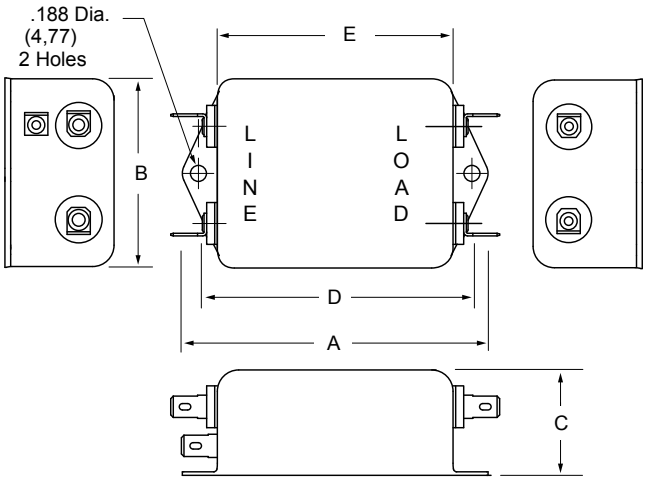
Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F1500AA03** **F1500CA03** **F1500FA03** **F1500CB03**	QC/QC IEC/QC Fused IEC/QC QC/Wire	Common **Differential**	32 **35**	43 **60**	50 **65**	50 **60**	50 **55**	50 **40**
6A	**F1500AA06** **F1500CA06** **F1500FA06** **F1500CB06**	IEC/QC Fused IEC/QC QC/Wire	Common **Differential**	32 **30**	42 **60**	45 **65**	45 **65**	45 **60**	45 **50**
10A	**F1500AA10** **F1500CA10** **F1500FA10** **F1500CB10**	QC/QC IEC/QC Fused IEC/QC	Common **Differential**	29 **15**	36 **50**	39 **65**	45 **65**	45 **60**	45 **50**
15A	**F1500CA15** **F1500CB15**	IEC/QC IEC/Wire	Common **Differential**	26 **35**	32 **60**	36 **65**	44 **65**	46 **65**	52 **65**

NOTE: Other combinations of terminals may be specified on special order.

Specifications subject to change.
Dimensions are shown for reference purposes only.

F1500AA (3 and 10Amp) Dimensions

Refer to Page 40 for Standard Mounting Cutouts

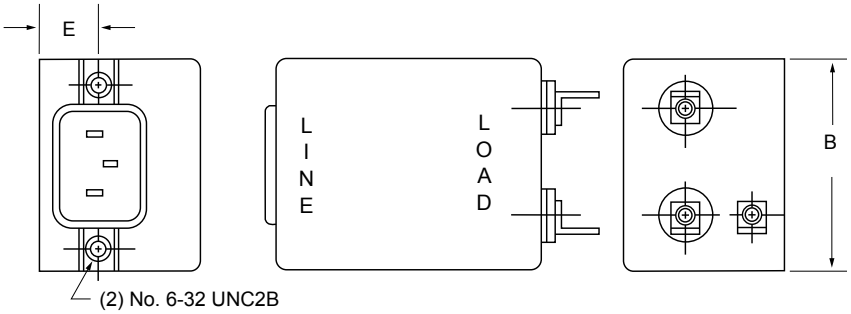


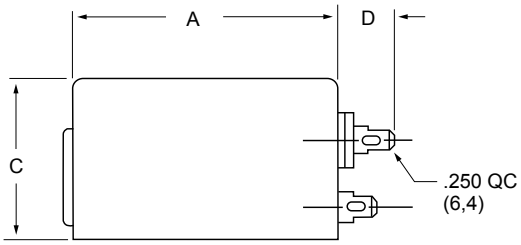
Amps	A	B	C	D	E
3A	3.31 (84,1)	2.000 (50,8)	1.13 (28,7)	2.938 (74,6)	2.50 (63,5)
10A	3.31 (84,1)	2.000 (50,8)	1.50 (38,1)	2.938 (74,6)	2.50 (63,5)

F1500CA
(3, 6, 10 and 15Amp) Dimensions

F1500CB
(3, 6, 10 and 15Amp) Dimensions

Refer to Page 40 for Standard Mounting Cutouts

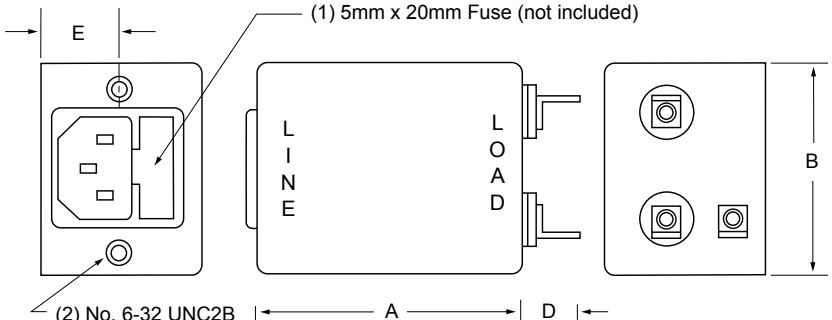


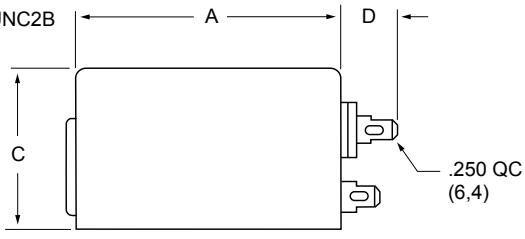


Amps	A	B	C	D	E
3A	2.000 (50,8)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
6A	2.500 (63,5)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
10A	2.500 (63,5)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
15A	3.25 (82,6)	2.25 (57,2)	1.75 (44,5)	.550 (14,0)	.705 (17,9)

F1500FA
(3, 6 and 10Amp) Dimensions

Refer to Page 40 for Standard Mounting Cutouts





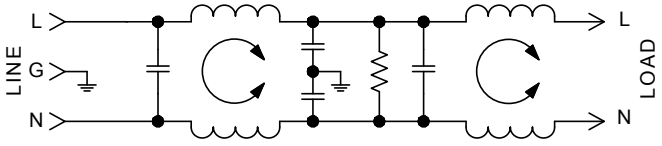
Amps	A	B	C	D	E
3A	2.000 (50,8)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.752 (19,1)
6A	2.500 (63,5)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.752 (19,1)
10A	2.500 (63,5)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.752 (19,1)

F1600 RFI Filters

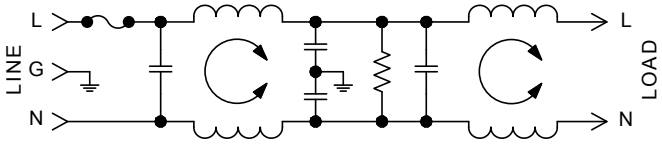
Features:

- T Section, Dual Coil Design – High Insertion Loss for Switching Power Supply Emissions
- Low-Leakage Current Design
- Space-Efficient with Integral IEC Connector and Compact Case in Current Ratings up to 10Amps
- Available in Fused IEC Connector and PC Mounted Versions

F1600CX Simplified Schematic



F1600FA Simplified Schematic



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	3A
10A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground 1500VAC
Line to Line 1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect
B: Wire
C: IEC Receptacle
P: PC – P.C. Board

Maximum Leakage Current:

Each Line to Ground	**F1600**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Agency Approvals:

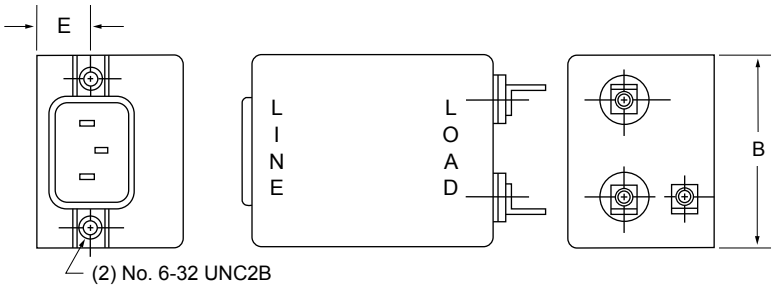
Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F1600CA03** **F1600CP03** **F1600FA03** **F1600CB03**	IEC/QC IEC/PC Fused IEC/QC IEC/Wire	Common **Differential**	52 **40**	65 **50**	65 **60**	65 **65**	65 **65**	65 **50**
6A	**F1600CA06** **F1600CP06** **F1600FA06** **F1600CB06**	IEC/QC IEC/PC Fused IEC/QC IEC/Wire	Common **Differential**	45 **30**	65 **45**	65 **55**	65 **50**	65 **50**	59 **50**
10A	**F1600CA10** **F1600CB10**	IEC/QC IEC/Wire	Common **Differential**	50 **23**	65 **45**	65 **55**	65 **50**	65 **50**	54 **50**

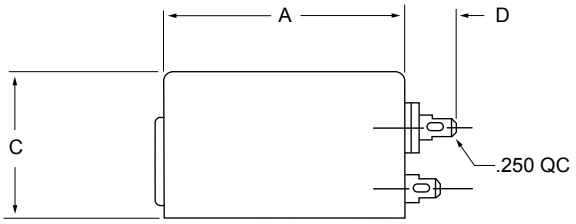
NOTE: Other combinations of terminals may be specified on special order.

Curtis Industries
A Division of Powers Holdings, Inc.

Specifications subject to change.
Dimensions are shown for reference purposes only.

F1600CA (3, 6 and 10Amp) Dimensions **F1600CB** (3, 6 and 10Amp) Dimensions



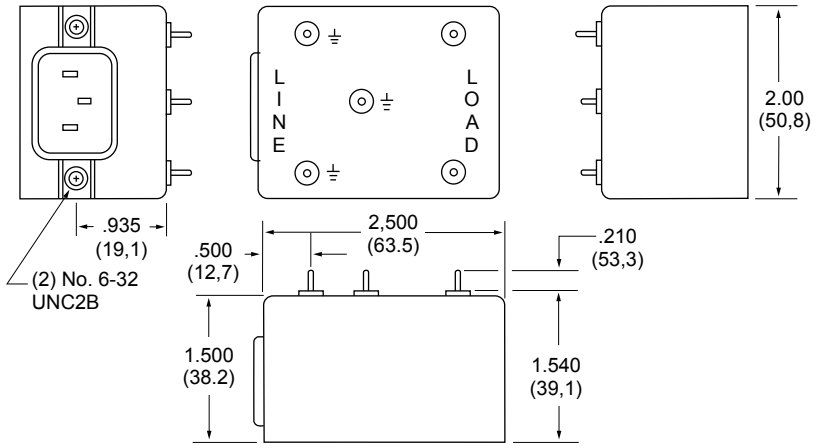


Refer to Page 40 for Standard Mounting Cutouts

Amps	A	B	C	D	E
3A	2.500 (63,5)	2.000 (50,8)	1.500 (38,2)	.550 (14,0)	.565 (14,3)
6A	2.500 (63,5)	2.000 (50,8)	1.500 (38,2)	.550 (14,0)	.565 (14,3)
10A	3.750 (95,2)	2.250 (57,2)	1.750 (44,5)	.550 (14,0)	.640 (16,3)

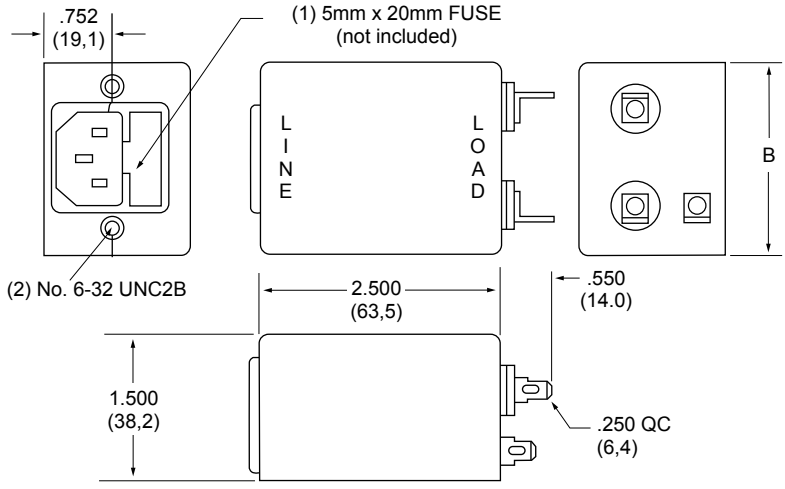
F1600CP
(3 and 6Amp) Dimensions

Refer to Page 40 for Standard Mounting Cutouts



F1600FA
(3 and 6Amp) Dimensions

Refer to Page 40 for Standard Mounting Cutouts

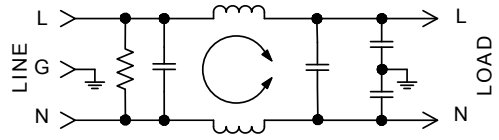


F1700/F1799 RFI Filters

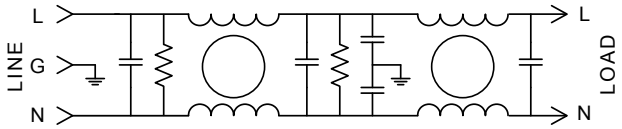
Features:

- General Purpose — Designed for Applications with Higher Differential Mode Noise
- Higher Line-to-Line Capacitance for Protection from Pulsed, Intermittent or Continuous RFI
- A Cost-Effective Replacement for Independent Coil Design in Many SMPS Applications
- Available with Integral IEC Connector

F1700 Simplified Schematic



F1799 Simplified Schematic



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	2.5A
6A	4A
10A	6A
20A	10A
30A	15A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect	C: IEC Receptacle
B: Wire	D: Screw

Maximum Leakage Current:

Each Line to Ground	F1700	F1710	F1720	F1740	F1799
115VAC, 60Hz:	0.40mA	.15mA	.002mA	.060mA	0.25mA
250VAC, 50Hz:	0.75mA	.25mA	.005mA	.120mA	0.45mA

Agency Approvals:

Except 30Amp

Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	.15	.50	1.0	5.0	10	30
3A	**F1700AA03** **F1700BB03** **F1700CA03**	QC/QC Wire/Wire IEC/QC	Common **Differential**	20 **25**	35 **60**	43 **65**	52 **65**	55 **50**	50 **50**
	F1710AA03	QC/QC	Common **Differential**	20 **25**	34 **60**	40 **65**	45 **65**	45 **50**	40 **50**
	F1720AA03	QC/QC	Common **Differential**	20 **35**	32 **60**	35 **65**	35 **60**	35 **55**	40 **40**
	F1740AA03	QC/QC	Common **Differential**	20 **35**	30 **60**	35 **65**	35 **60**	35 **55**	40 **40**
6A	**F1700AA06** **F1700BB06** **F1700CA06**	QC/QC Wire/Wire IEC/QC	Common **Differential**	10 **15**	22 **50**	30 **65**	46 **60**	50 **60**	45 **60**
10A	**F1700AA10** **F1700BB10** **F1700CA10**	QC/QC Wire/Wire IEC/QC	Common **Differential**	10 **20**	22 **45**	30 **60**	46 **65**	50 **60**	45 **55**
20A	**F1700AA20**	QC/QC Screw/Screw	Common **Differential**	10 **15**	22 **45**	30 **60**	42 **65**	47 **60**	40 **55**
	F1700DD20 **F1720DD20**	Screw/Screw	Common **Differential**	10 **15**	22 **45**	30 **60**	42 **65**	47 **60**	52 **55**
30A	**F1700DD30**	Screw/Screw	Common **Differential**	7 **15**	15 **45**	20 **60**	34 **65**	42 **60**	40 **55**
	F1799DD30	Screw/Screw	Common **Differential**	10 **15**	45 **65**	55 **65**	60 **65**	60 **60**	50 **55**

NOTE: Other combinations of terminals may be specified on special order.

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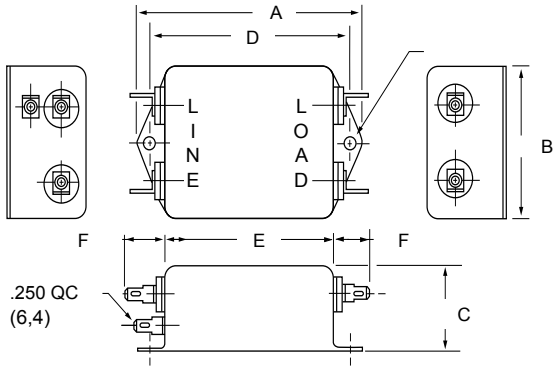
Specifications subject to change.
Dimensions are shown for reference purposes only.

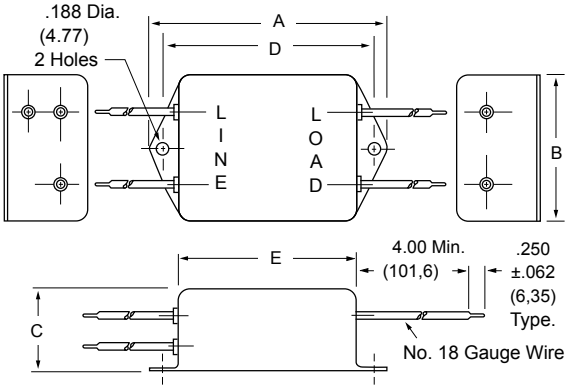
F1700AA, 1710, 1720, 1740 (3, 6 and 10Amp) Dimensions



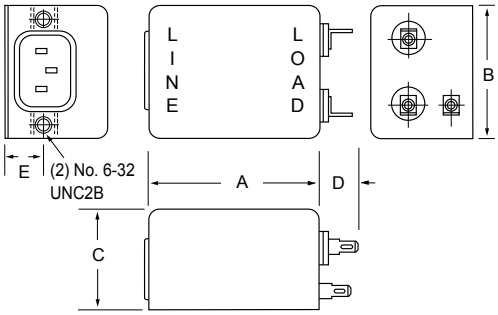
Amps	A	B	C	D	E	F
3A	2.750 (69,8)	1.750 (44,4)	1.125 (28,5)	2.375 (60,3)	2.000 (50,8)	.550 (14,0)
6A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
10A	3.312 (84,1)	2.000 (50,8)	1.500 (38,2)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
20A	See 1700DD20 for Case Dimensions					

F1700BB (3, 6 and 10Amp) Dimensions

Amps	A	B	C	D	E
3A	2.750 (69,8)	1.750 (44,4)	1.125 (28,5)	2.375 (60,3)	2.000 (50,8)
6A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	2.500 (63,5)
10A	3.312 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	2.500 (63,5)



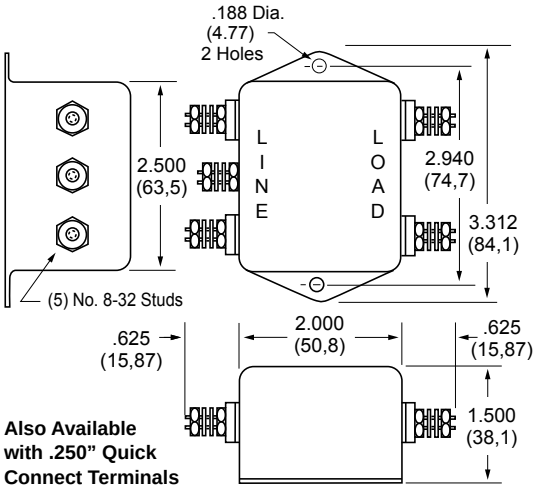
F1700CA (3, 6 and 10Amp) Dimensions



Refer to Page 40 for Standard Mounting Cutouts

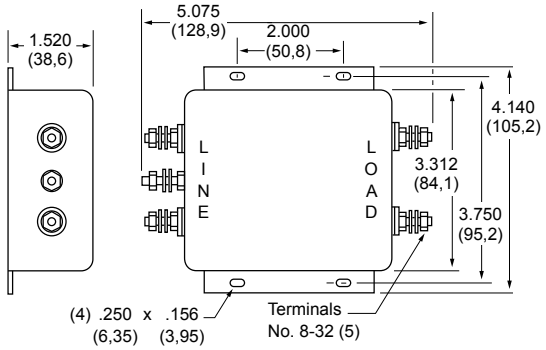
Amps	A	B	C	D	E
3A	2.000 (50,8)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
6A	2.500 (63,5)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)
10A	2.500 (63,5)	2.000 (50,8)	1.500 (38,1)	.550 (14,0)	.565 (14,3)

F1700DD20 (20Amp) Dimensions

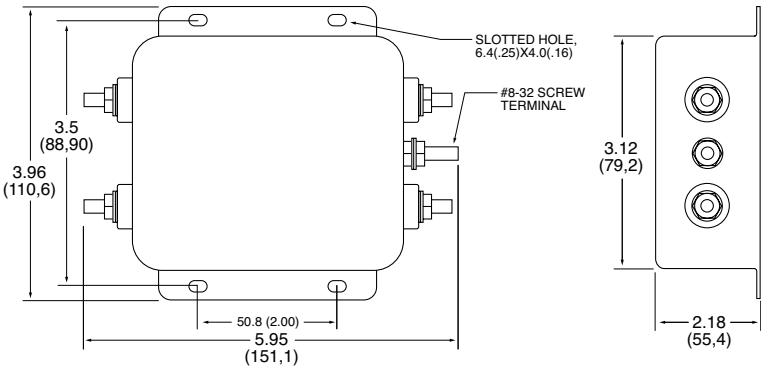


Also Available with .250" Quick Connect Terminals

F1700DD30 (30Amp) Dimensions



F1799DD (30Amp) Dimensions



Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F1760/F1770/F1780 RFI Filters

Features:

- Designed for Applications Where Switching Power Supplies, SCR's and TTL Circuits Are Utilized
- Protection from Pulsed, Intermittent or Continuous RFI
- Effective CM and DM Suppression for Most FCC VDE Requirements Down to 150KHz
- Available in Stud and Quick Connect Terminal Versions

Specifications:

Rated Voltage: 250VAC, Maximum - 50/60 Hz

Rated Current: 115VAC 20A, 250VAC 14A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):
Line to Ground 1500VAC
Line to Line 1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

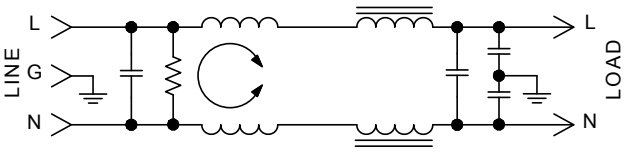
Termination:
A: QC – Quick Connect
D: Screw

Maximum Leakage Current:

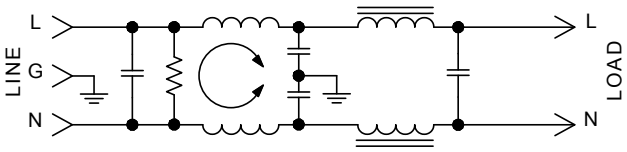
Each Line to Ground	F1760/1770/1780
115VAC, 60Hz:	0.5mA
250VAC, 50Hz:	1.0mA

Agency Approvals:

F1760 Simplified Schematic



F1770 Simplified Schematic



Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)							
			MODE	Frequency - MHz						
				.15	.50	1.0	5.0	10	20	30
3A	**F1760AA03** **F1760DD03**	QC/QC Screw/Screw	Common **Differential**	15 **40**	30 **65**	40 **65**	45 **60**	50 **55**	45 **55**	45 **55**
	F1780AA03 **F1780DD03**	QC/QC Screw/Screw	Common **Differential**	13 **40**	25 **65**	40 **65**	60 **62**	60 **55**	55 **45**	50 **45**
6A	**F1760AA06** **F1760DD06**	QC/QC Screw/Screw	Common **Differential**	15 **40**	30 **65**	35 **65**	35 **65**	44 **53**	43 **52**	42 **50**
	F1780AA06 **F1780DD06**	QC/QC Screw/Screw	Common **Differential**	13 **40**	30 **65**	40 **65**	65 **62**	65 **55**	53 **45**	48 **45**
10A	**F1760AA10** **F1760DD10**	QC/QC Screw/Screw	Common **Differential**	15 **40**	30 **65**	35 **65**	50 **55**	50 **50**	40 **50**	40 **50**
	F1780AA10 **F1780DD10**	QC/QC Screw/Screw	Common **Differential**	13 **40**	20 **65**	35 **65**	65 **62**	65 **55**	55 **45**	50 **45**
20A	**F1760AA20** **F1760DD20**	QC/QC Screw/Screw	Common **Differential**	12 **41**	25 **65**	31 **65**	42 **65**	47 **60**	50 **60**	40 **55**
	F1780AA20 **F1780DD20**	QC/QC Screw/Screw	Common **Differential**	12 **41**	30 **65**	32 **65**	60 **65**	60 **60**	60 **60**	55 **55**

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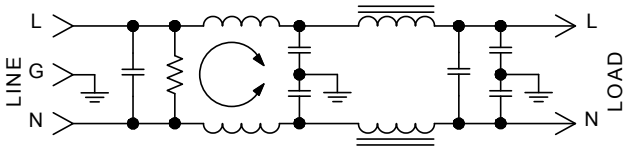
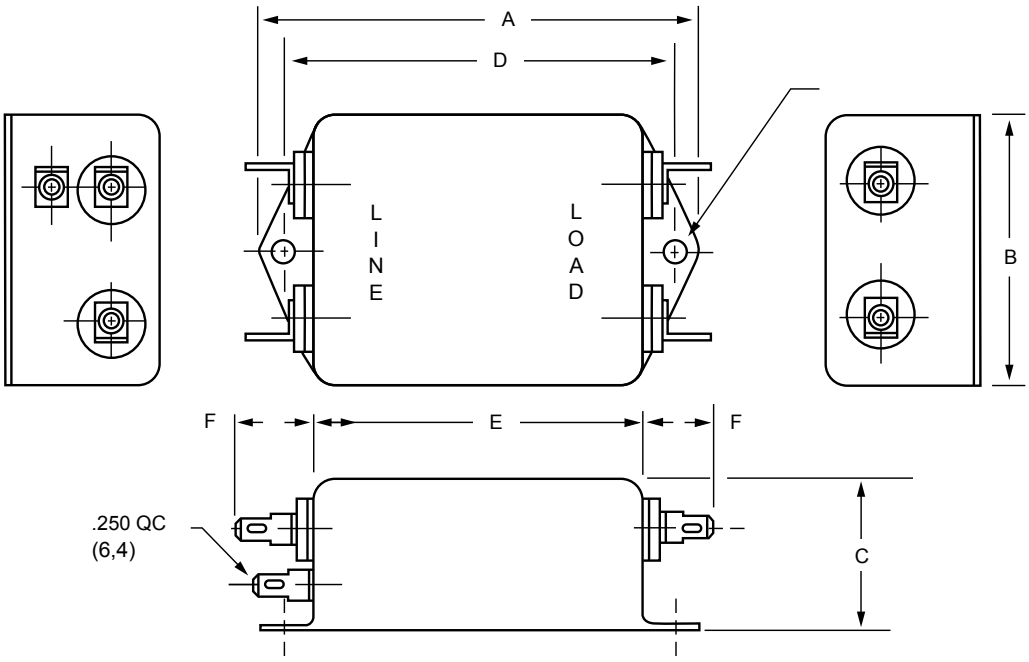
Specifications subject to change.
Dimensions are shown for reference purposes only.

F1780 Simplified Schematic

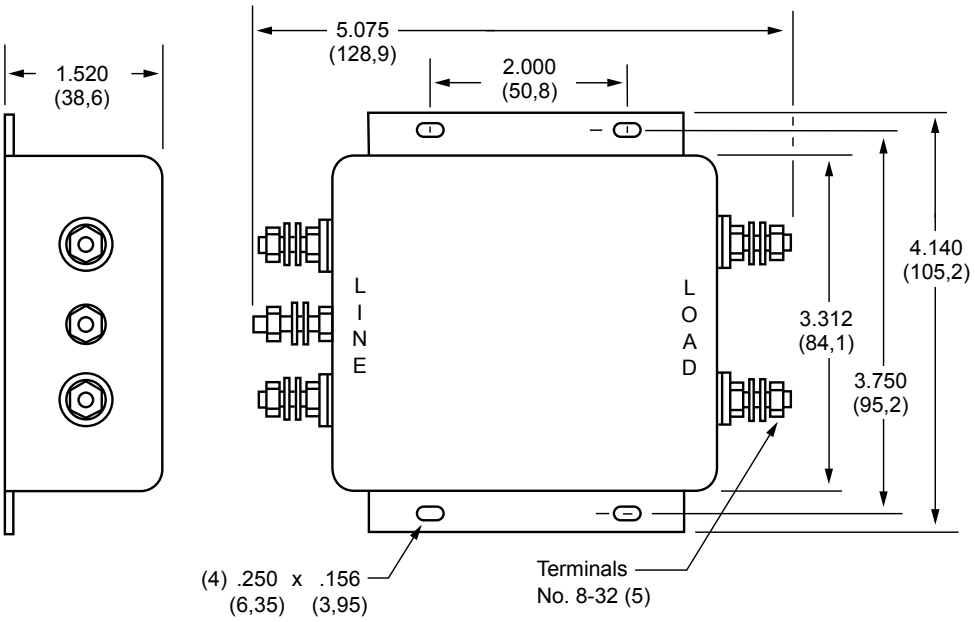


Amps	A	B	C	D	E	F
3A	2.750 (69,8)	1.750 (44,4)	1.125 (28,5)	2.375 (60,3)	2.000 (50,8)	.550 (14,0)
6A	3.312 (84,1)	2.000 (50,8)	1.500 (28,5)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
10A	3.312 (84,1)	2.000 (50,8)	1.500 (38,2)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)

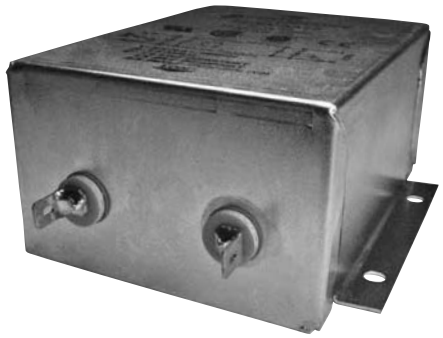
F1760/F1770/1780AA
(3, 6, and 10Amp) Dimensions



F1760/F1770/1780 (20Amp Only) Dimensions



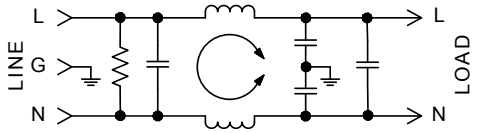
Dimensions are in inches and millimeters
unless otherwise specified.
Values in parentheses are metric equivalents.



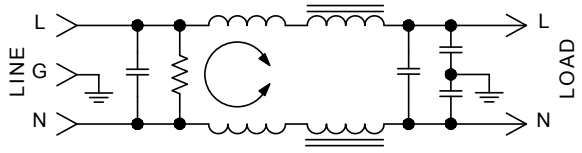
Features:

- Designed for VDE “A” and FCC “B” Switching Power Supply Applications
- Low-Leakage Current
- Compact Case Sizes in Current Ratings up to 15A
- Effective Reduction of Common Mode and Differential Mode Noise from 100KHz to 30MHz

F2800 Simplified Schematic 3 & 6Amp



F2800 Simplified Schematic 10 & 15Amp



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	4A
10A	6A
15A	12A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground 1500VAC
Line to Line 1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect
B: Wire

Maximum Leakage Current:

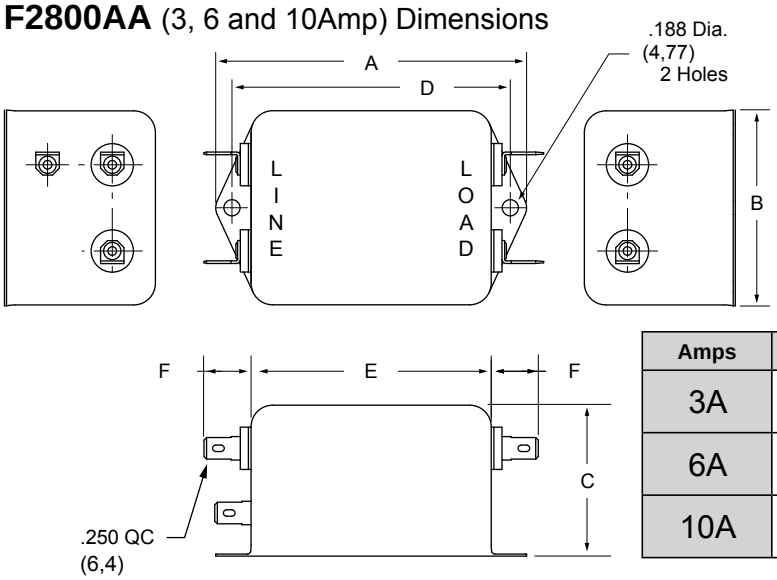
Each Line to Ground	**F2800**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Agency Approvals:

Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)								
			MODE	Frequency - MHz							
				.01	.05	.15	.50	1.0	5.0	10	30
3A	**F2800AA03** **F2800BB03**	QC/QC Wire/Wire	Common **Differential**	10 **5**	30 **25**	35 **50**	35 **60**	35 **65**	40 **50**	45 **45**	50 **45**
6A	**F2800AA06** **F2800BB06**	QC/QC Wire/Wire	Common **Differential**	5 **5**	20 **10**	30 **40**	35 **60**	40 **60**	40 **50**	40 **50**	50 **45**
10A	**F2800AA10** **F2800BB10**	QC/QC Wire/Wire	Common **Differential**	5 **7**	15 **20**	25 **50**	30 **60**	35 **60**	40 **60**	45 **60**	50 **55**
15A	**F2800AA15** **F2800BB15**	QC/QC Wire/Wire	Common **Differential**	8 **10**	21 **30**	29 **70**	33 **70**	36 **70**	38 **70**	45 **70**	50 **60**

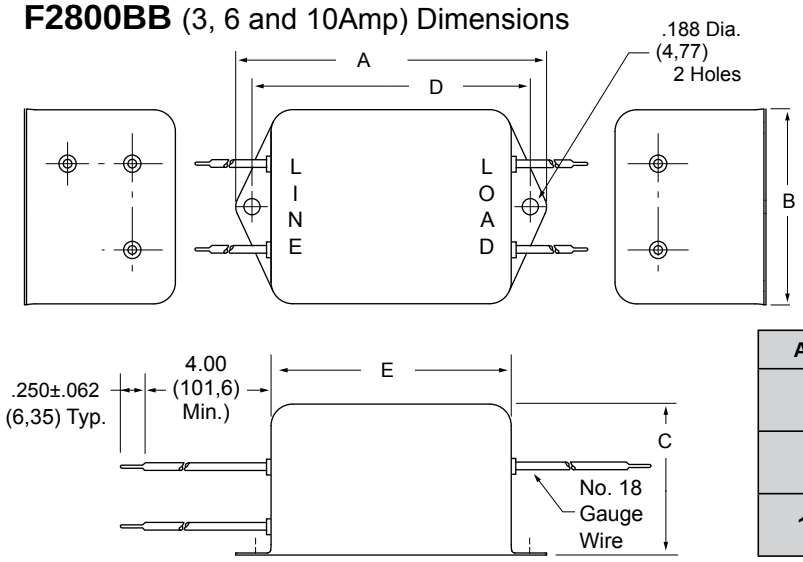
Specifications subject to change.
Dimensions are shown for reference purposes only.

F2800AA (3, 6 and 10Amp) Dimensions



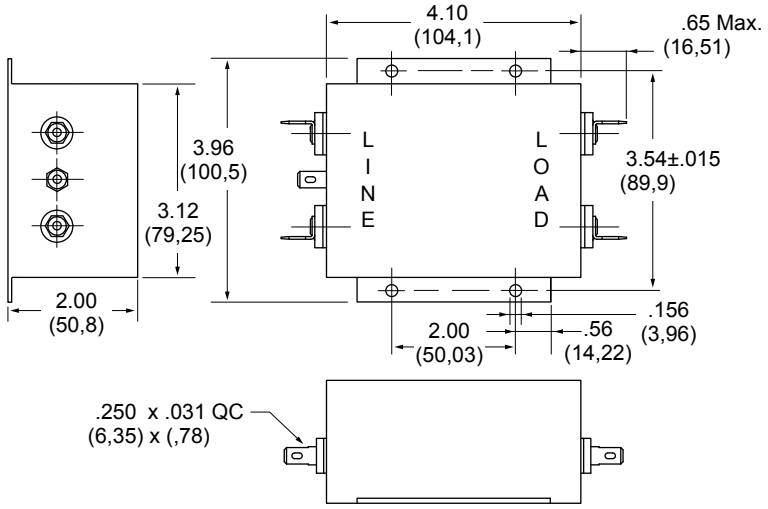
Amps	A	B	C	D	E	F
3A	3.310 (84,1)	2.000 (50,8)	1.500 (38,2)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
6A	3.310 (84,1)	2.000 (50,8)	1.500 (38,2)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
10A	4.44 (113)	2.250 (57,1)	1.750 (44,4)	4.063 (103,2)	3.630 (92,2)	.650 (16,5)

F2800BB (3, 6 and 10Amp) Dimensions

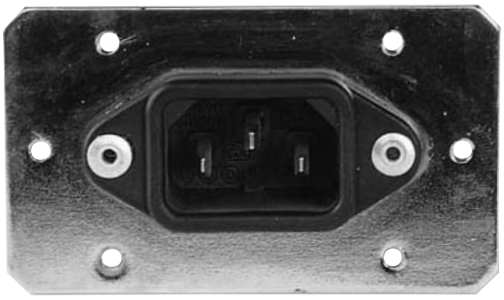


Amps	A	B	C	D	E
3A	3.310 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	2.500 (63,5)
6A	3.310 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	2.500 (63,5)
10A	4.690 (119)	2.250 (57,1)	1.750 (44,4)	4.063 (103,2)	3.630 (92,2)

F2800AA
F2800BB
(15Amp)
Dimensions



Dimensions are in inches and millimeters
unless otherwise specified.
Values in parentheses are metric equivalents.



Ideal for Linear Power Supplies in Digital Equipment

Features:

- General Purpose Filter with Extended High-Frequency Insertion Loss Characteristics
- Effective Suppression of Incoming Common Mode and Differential Mode Noise
- Low-Profile Package with Integral IEC Connector
- Available in 3, 6 and 10Amp Ratings

Nominal Current Rating	Part Number	Termination Line/Load
3A	**F5100CG03**	IEC/ Solder Tab
6A	**F5100CG06**	IEC/ Solder Tab
10A	**F5100CG10**	IEC/ Solder Tab

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	4A
10A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1400VDC
Line to Line	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

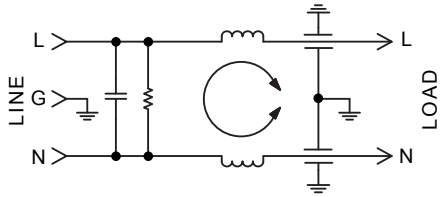
C: IEC Receptacle
G: Wire Wrap/Solder

Maximum Leakage Current:

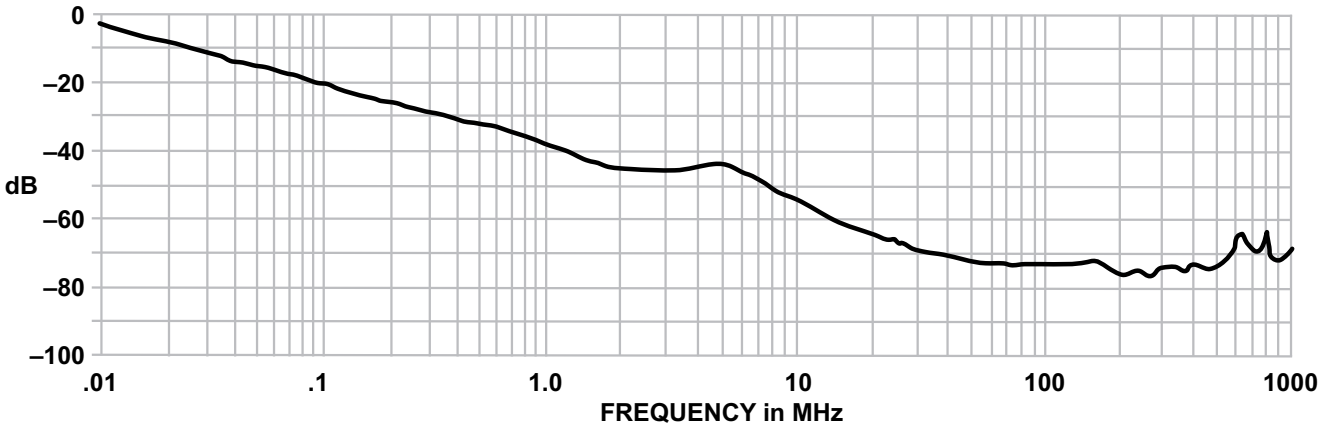
Each Line to Ground	**F5100**
115VAC, 60Hz:	0.25mA
250VAC, 60Hz:	0.50mA

Agency Approvals:

F5100 Simplified Schematic



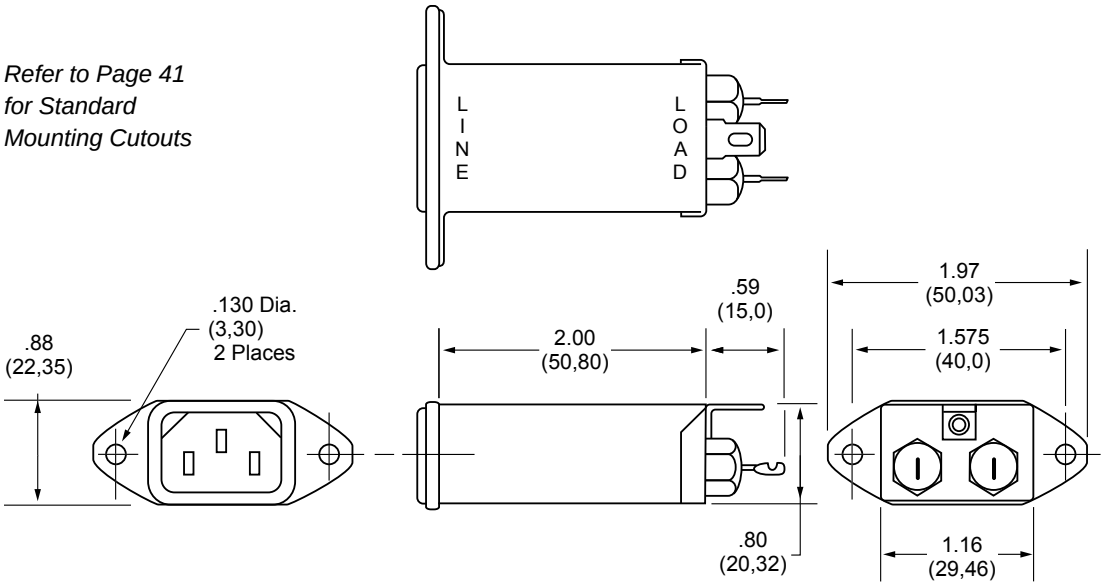
F5100 SERIES
TYPICAL COMMON MODE
INSERTION LOSS — dB
(50 OHM CIRCUIT)



Specifications subject to change.
Dimensions are shown for reference purposes only.

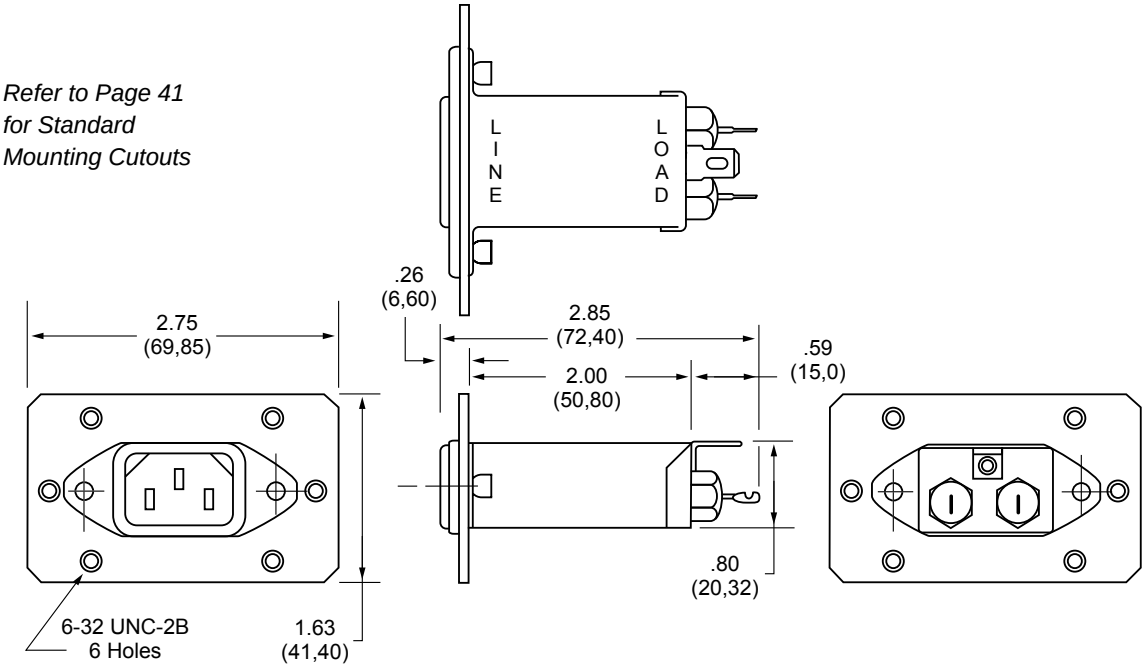
F5100CG (3, 6 and 10Amp) Dimensions

Refer to Page 41 for Standard Mounting Cutouts

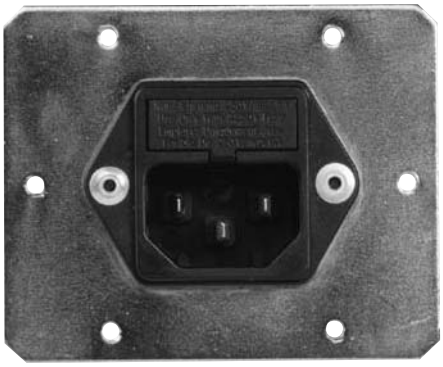


F5101CG (3, 6 and 10Amp) Dimensions with attached mounting plate

Refer to Page 41 for Standard Mounting Cutouts



Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.



Ideal for Linear Power Supplies in Digital Equipment

Features:

- General Purpose Filter with Extended High-Frequency Insertion Loss Characteristics
- Effective Suppression of Incoming Common Mode and Differential Mode Noise
- Low-Profile Package with Integral IEC Connector
- Available in 3 and 6Amp Ratings

Nominal Current Rating	Part Number	Termination Line/Load
3A	**F5200FG03**	Fused IEC/ Solder Tab
6A	**F5200FG06**	Fused IEC/ Solder Tab

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	4A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1400VDC
Line to Line	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

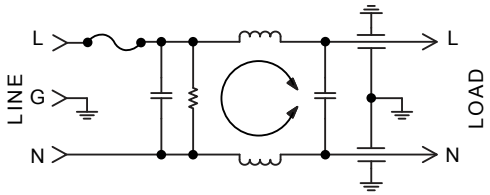
F: Fused IEC Receptacle
G: Wire Wrap/Solder

Maximum Leakage Current:

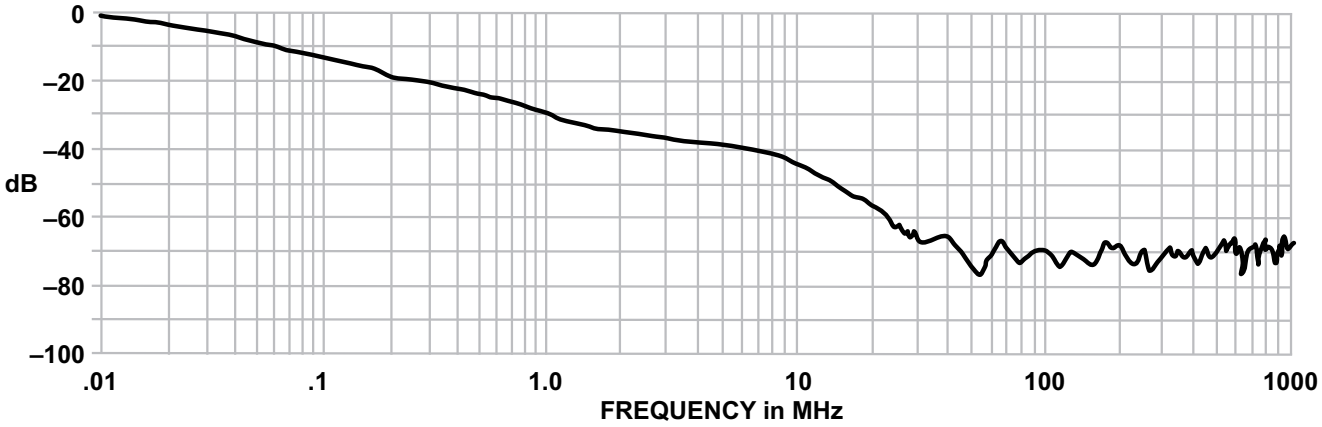
Each Line to Ground	**F5200**
115VAC, 60Hz:	0.25mA
250VAC, 60Hz:	0.50mA

Agency Approvals:

F5200 Simplified Schematic



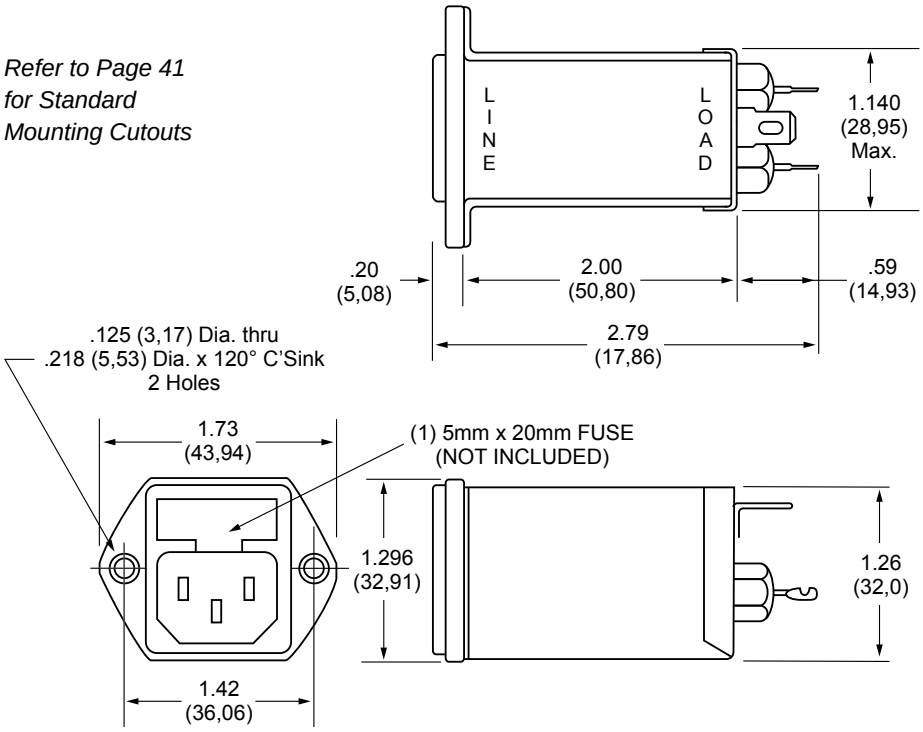
F5200 SERIES
TYPICAL COMMON MODE
INSERTION LOSS — dB
(50 OHM CIRCUIT)



Specifications subject to change.
Dimensions are shown for reference purposes only.

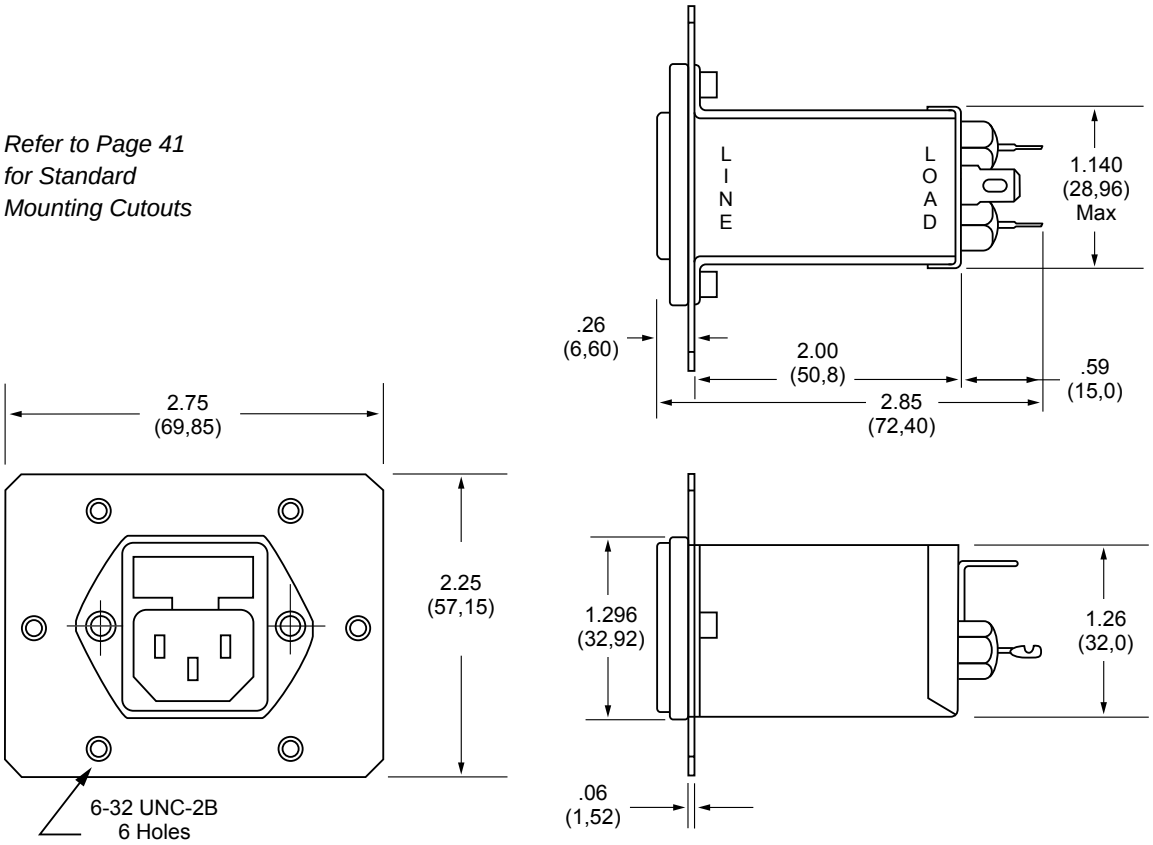
F5200FG (3 and 6Amp) Dimensions

Refer to Page 41 for Standard Mounting Cutouts



F5201FG (3 and 6Amp) Dimensions with attached mounting plate

Refer to Page 41 for Standard Mounting Cutouts



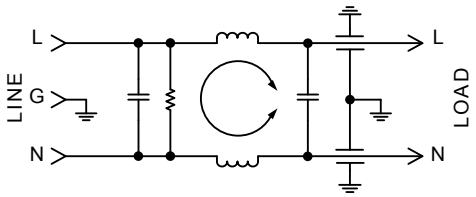
Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

Ideal for Linear and Switching Power Supplies

Features:

- FCC and VDE Level “A” Applications
- High Inductance Single Coil Design Provides High Common Mode and Differential Mode Performance Above 150KHz
- High-Frequency Construction Techniques Maintain >50dB Insertion Loss from 10MHz to 1GHz
- Compact, Space-Saving Package Available in 3, 6 and 10-Amp Ratings

F5500 Simplified Schematic



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	3A
6A	4A
10A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1400VDC
Line to Line	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

C: IEC Receptacle
G: Wire Wrap/Solder

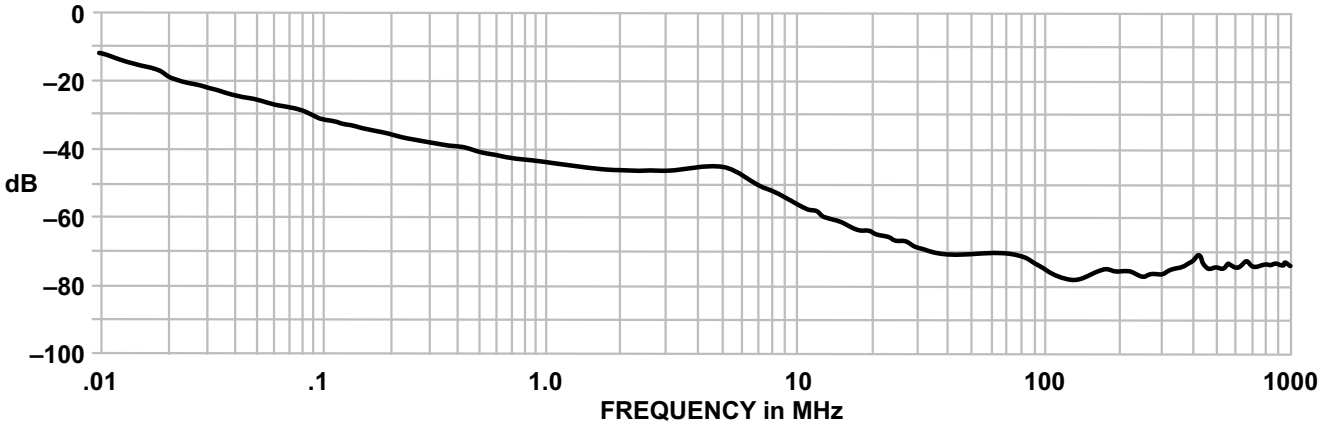
Maximum Leakage Current:

Each Line to Ground	**F5500**
115VAC, 60Hz:	0.25mA
250VAC, 60Hz:	0.50mA

Agency Approvals:

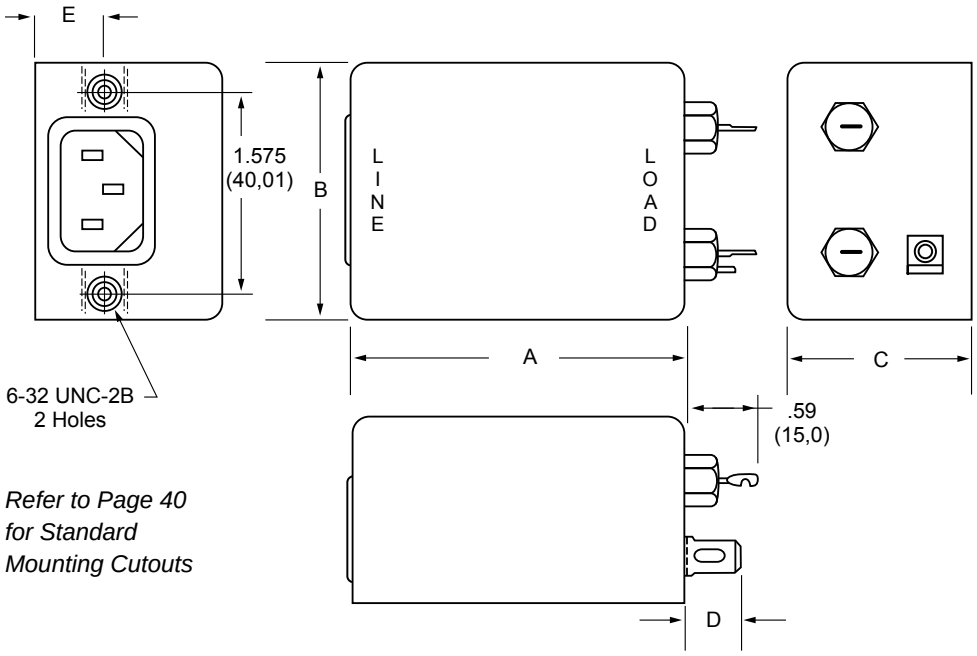
Nominal Current Rating	Part Number	Termination Line/Load
3A	**F5500CG03**	IEC/ Solder Tab
6A	**F5500CG06**	IEC/ Solder Tab
10A	**F5500CG10**	IEC/ Solder Tab

F5500 SERIES
TYPICAL COMMON MODE
INSERTION LOSS — dB
(50 OHM CIRCUIT)



Specifications subject to change.
Dimensions are shown for reference purposes only.

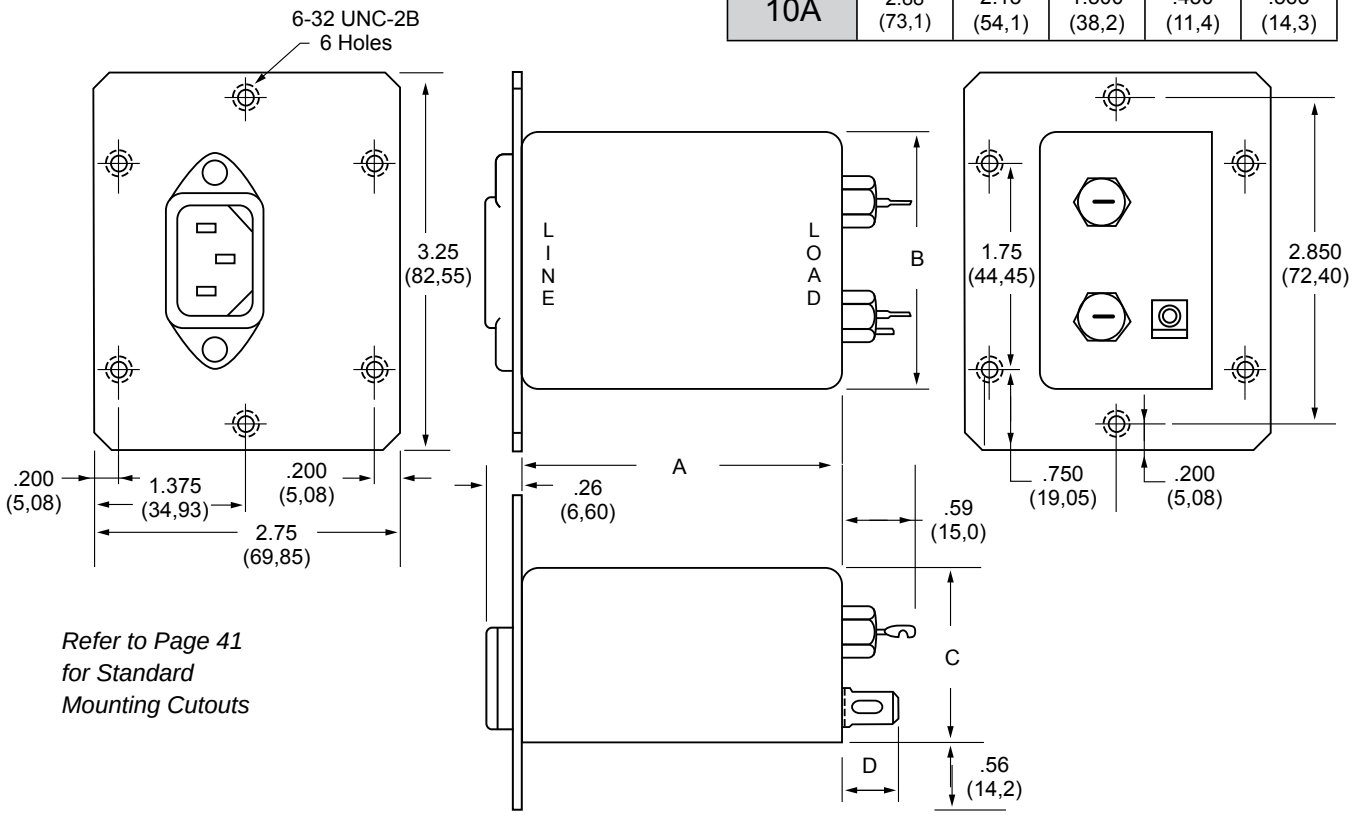
F5500CG (3, 6 and 10Amp) Dimensions



Refer to Page 40 for Standard Mounting Cutouts

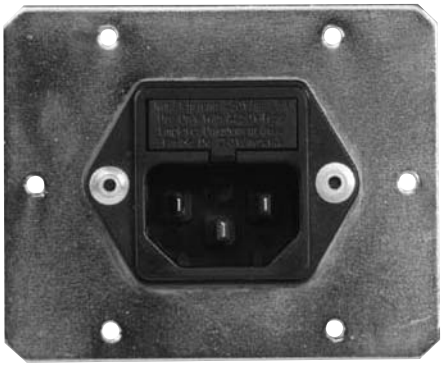
Amps	A	B	C	D	E
3A	2.000 (50,8)	2.000 (50,8)	1.500 (38,2)	.450 (11,4)	.565 (14,3)
6A	2.88 (73,1)	2.13 (54,1)	1.500 (38,2)	.450 (11,4)	.565 (14,3)
10A	2.88 (73,1)	2.13 (54,1)	1.500 (38,2)	.450 (11,4)	.565 (14,3)

F5501CG (3, 6 and 10Amp) Dimensions with attached mounting plate



Refer to Page 41 for Standard Mounting Cutouts

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.



Features:

- Suited for FCC “B” and VDE “A” Switching Power Supply Applications
- High Inductance, Multi-Stage Design with High Common Mode and Differential Mode Insertion Loss for Switching Power Supply Emissions
- >70dB Insertion Loss from 200KHz to 1GHz
- Compact, Space-Efficient Package Available in 3 and 6Amp Ratings

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	4A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1400VDC
Line to Line	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max at rated current

Humidity Range: 0% to 95% R.H.

Termination:

C: IEC Receptacle
F: Fused IEC Receptacle
G: Wire Wrap/Solder

Termination: Quick Connect

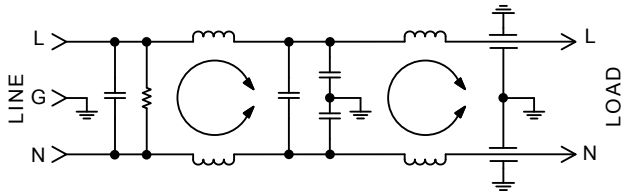
Maximum Leakage Current:

Each Line to Ground	**F5600**
115VAC, 60Hz:	0.50mA
250VAC, 60Hz:	1.20mA

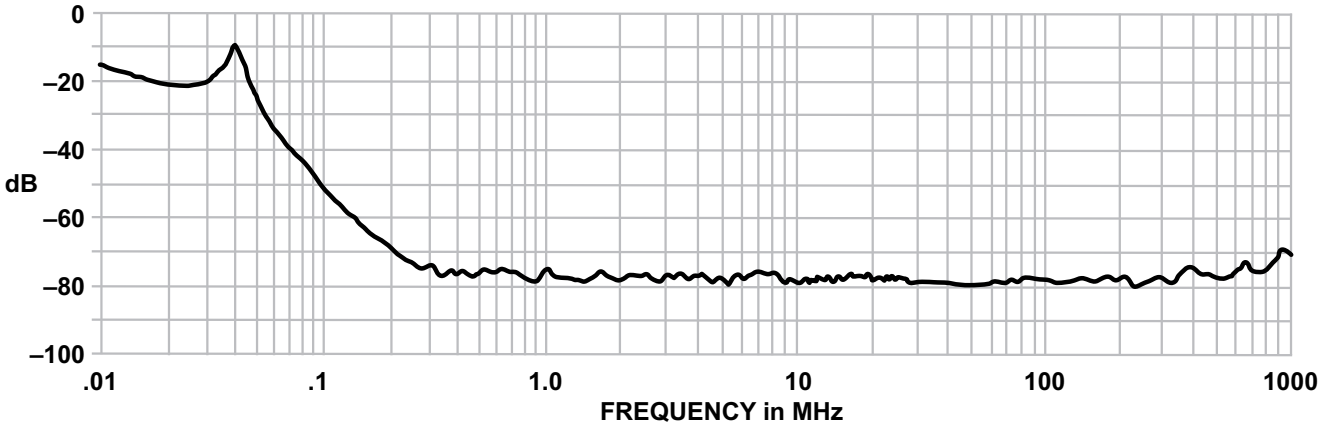
Agency Approvals:

Nominal Current Rating	Part Number	Termination Line/Load
3A	**F5600CG03**	IEC/Solder Tab
	F5600FG03	Fused IEC/ Solder Tab
6A	**F5600CG06**	IEC/Solder Tab
	F5600FG06	Fused IEC/ Solder Tab

F5600 Simplified Schematic

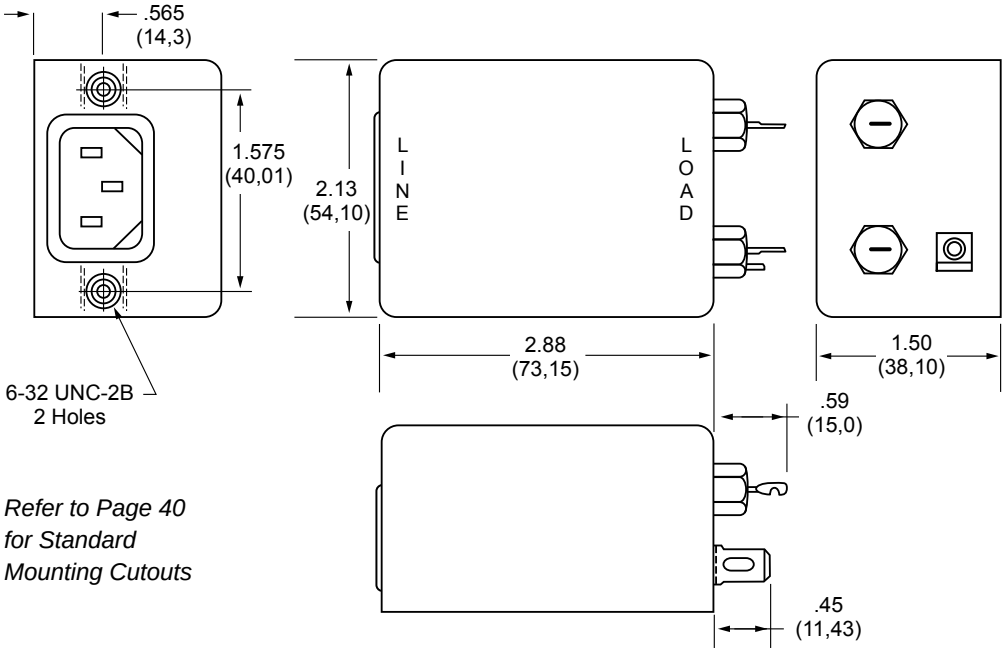


F5600 SERIES
TYPICAL COMMON MODE
INSERTION LOSS — dB
(50 OHM CIRCUIT)



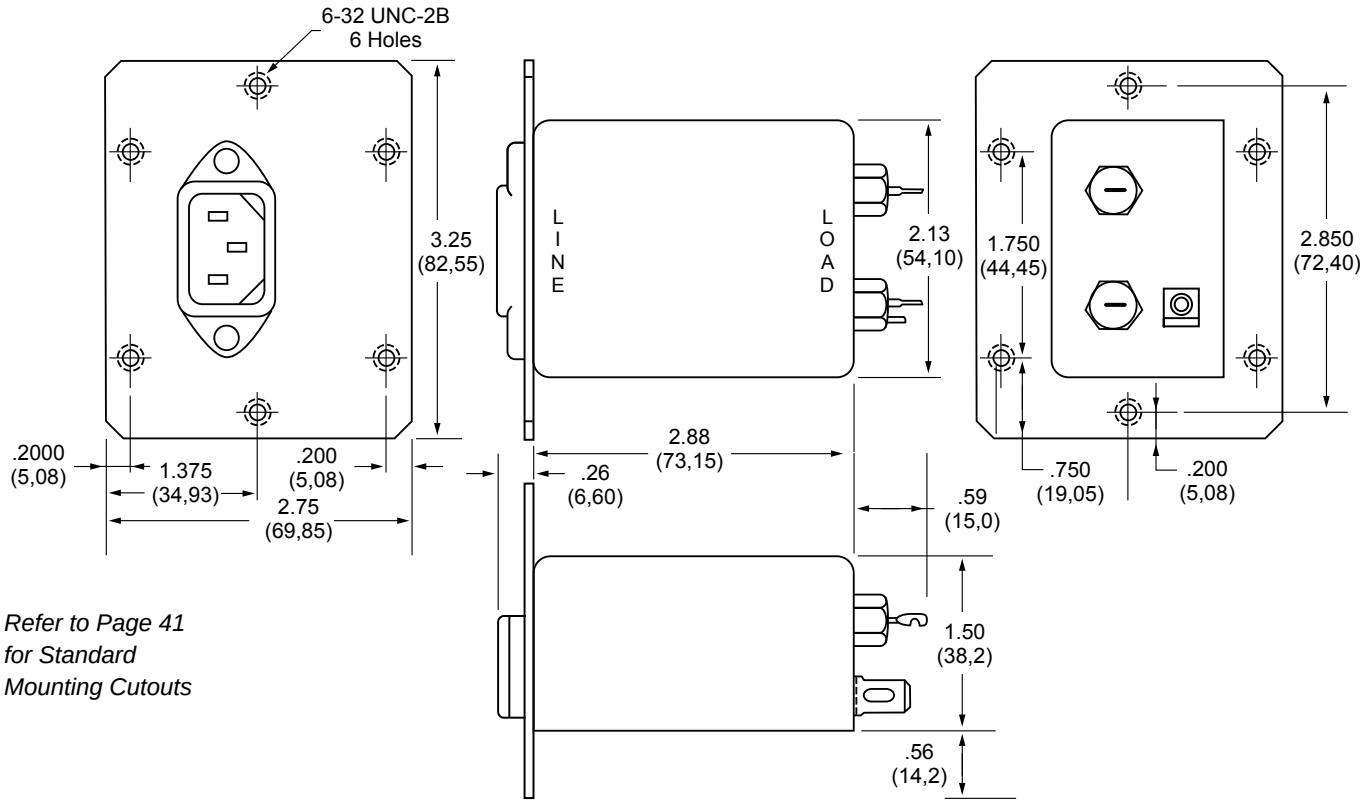
Specifications subject to change.
Dimensions are shown for reference purposes only.

F5600CG (3 and 6Amp) Dimensions



Refer to Page 40 for Standard Mounting Cutouts

F5601CG (3 and 6Amp) Dimensions with attached mounting plate



Refer to Page 41 for Standard Mounting Cutouts

Dimensions are in inches and millimeters
unless otherwise specified.
Values in parentheses are metric equivalents.

Features:

- Ideal for VDE “B” and MIL-STD-461 Switching Power Supply Applications
- Very High Inductance Design with Differential Mode Choke to Provide Improved Performance Below 100KHz
- Wide-Band Insertion Loss >60dB from 10MHz to 1GHz
- Compact, Space-Efficient Package Available in 3 and 6Amp Ratings

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	2A
6A	4A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1400VDC
Line to Line	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

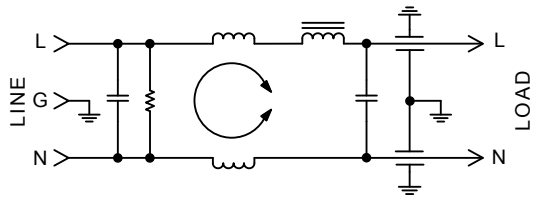
C: IEC Receptacle
G: Wire Wrap/Solder

Maximum Leakage Current:

Each Line to Ground	**F5700**
115VAC, 60Hz:	0.50mA
250VAC, 60Hz:	1.20mA

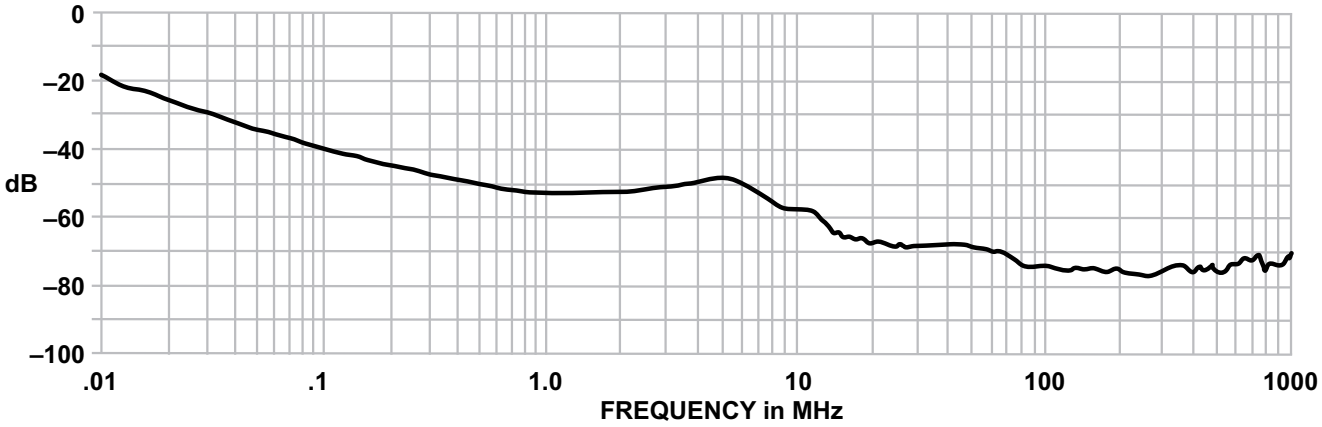
Agency Approvals:

F5700 Simplified Schematic



Nominal Current Rating	Part Number	Termination Line/Load
3A	**F5700CG03**	IEC/ Solder Tab
6A	**F5700CG06**	IEC/ Solder Tab

F5700 SERIES
TYPICAL COMMON MODE
INSERTION LOSS — dB
(50 OHM CIRCUIT)



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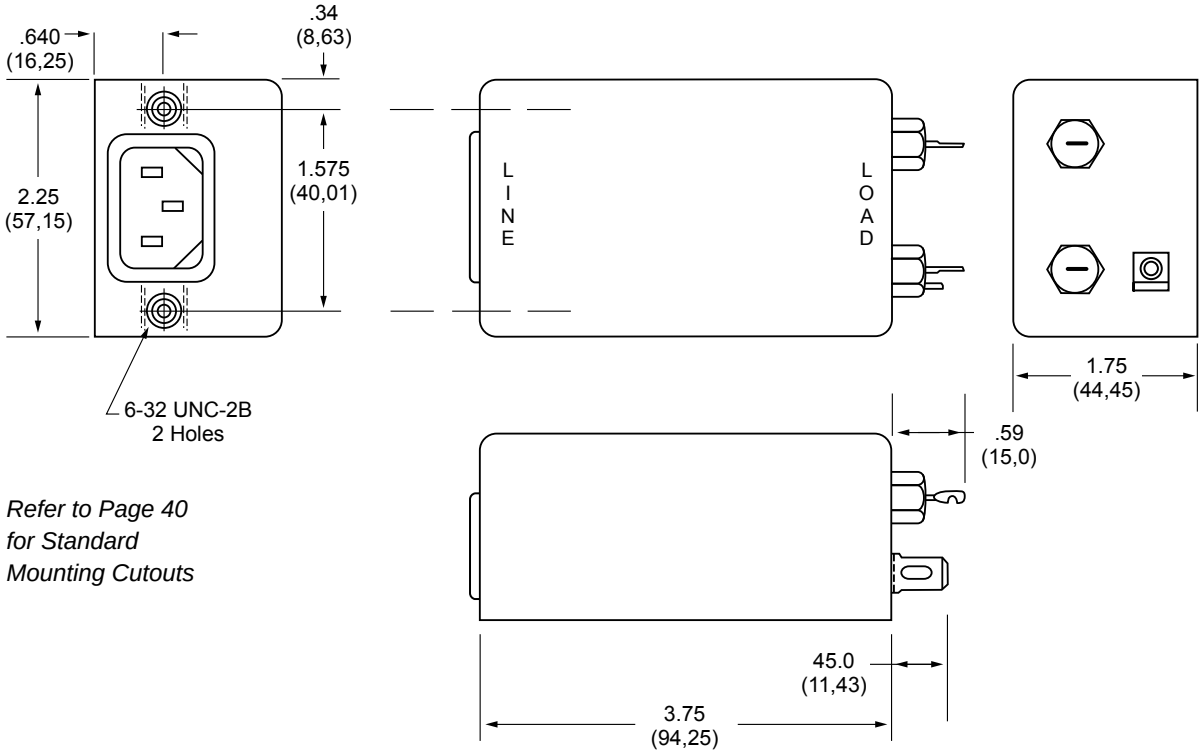
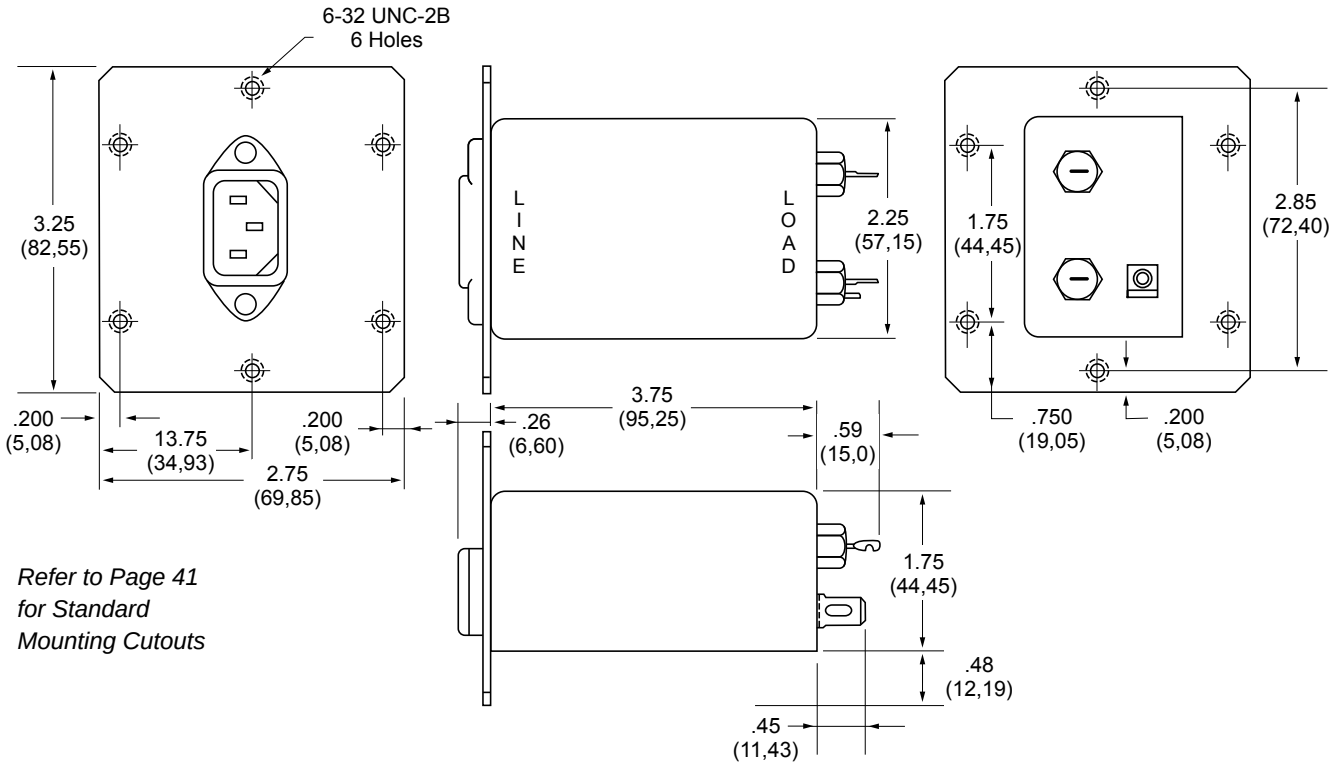
Specifications subject to change.
Dimensions are shown for reference purposes only.

F5700CG (3 and 6Amp) Dimensions



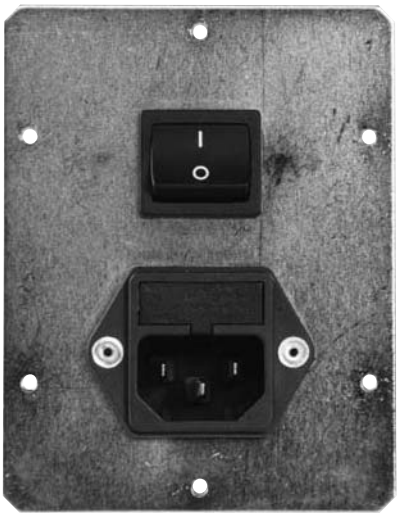
Refer to Page 40 for Standard Mounting Cutouts

F5701CG (3 and 6Amp) Dimensions with attached mounting plate



Refer to Page 41 for Standard Mounting Cutouts

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	4A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VDC
Line to Line	1450VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

C: IEC Receptacle
F: Fused IEC
G: Wire Wrap/Solder
J: Switched IEC

Maximum Leakage Current:

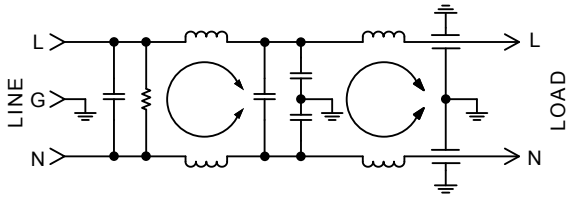
Each Line to Ground	**F5900**
115VAC, 60Hz:	0.50mA
250VAC, 60Hz:	1.20mA

Agency Approvals:

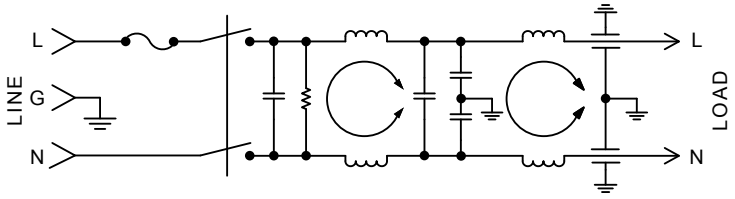
Features:

- High Performance Filter Designed for Switching Power Supply Emissions
- >70dB Insertion Loss from 200KHz to 1GHz
- Integral Power Switch and 5 x 20mm Fuse Holder
- Available in 3 and 6Amp Versions with Optional Mounting Faceplates

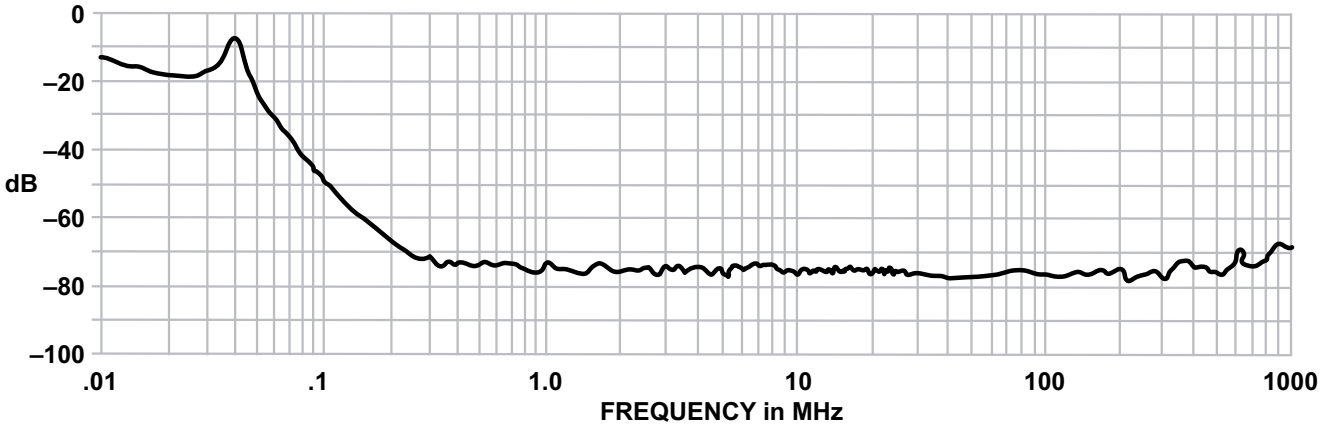
F5900 Simplified Schematic without Switch



F5900 Simplified Schematic with Switch



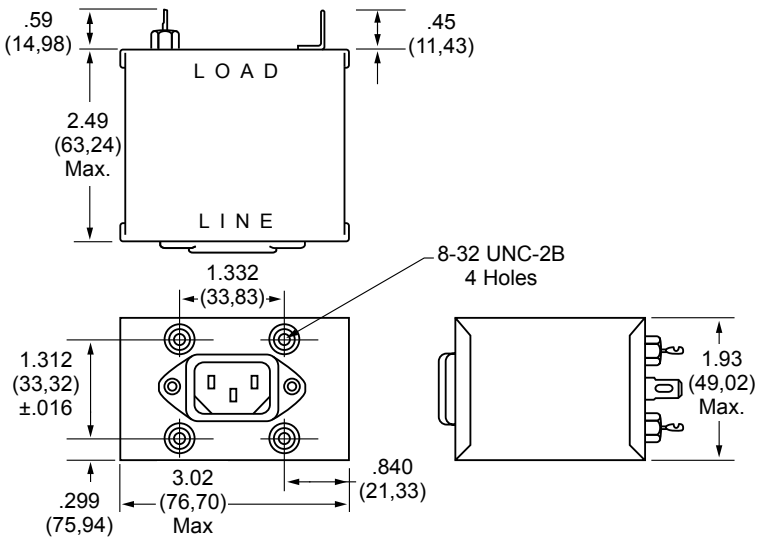
F5900 SERIES
TYPICAL COMMON MODE
INSERTION LOSS — dB
(50 OHM CIRCUIT)



Specifications subject to change.
Dimensions are shown for reference purposes only.

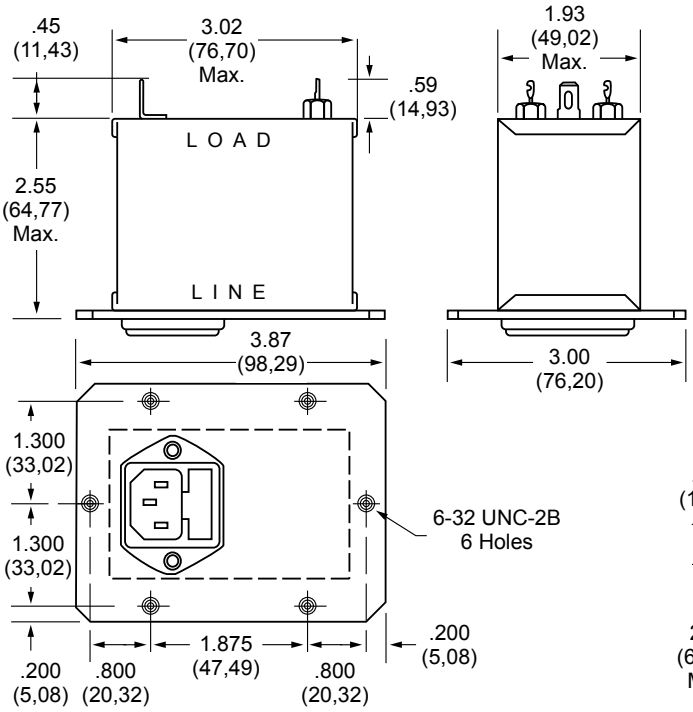
F5900CG (3 and 6Amp) Dimensions

Refer to Page 42 for Standard Mounting Cutouts



F5900FG (3 and 6Amp) Dimensions

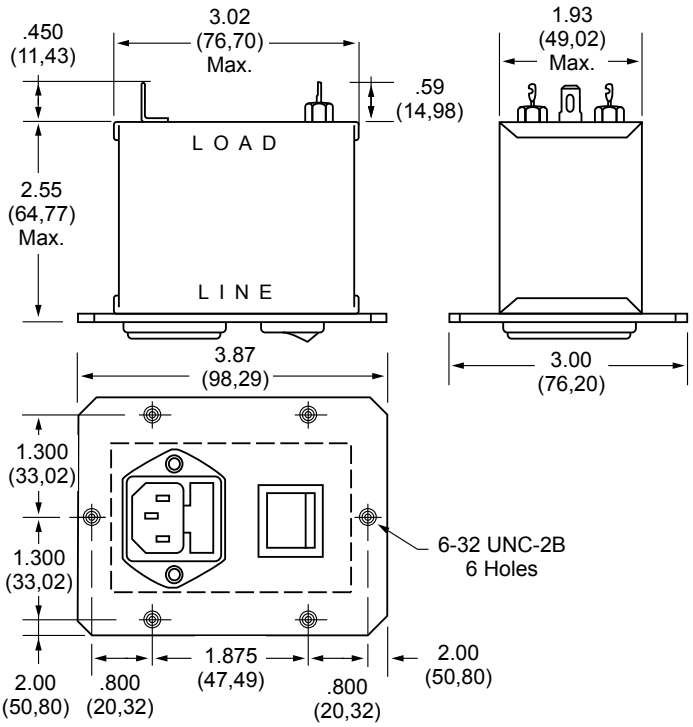
Refer to Page 42 for Standard Mounting Cutouts



Nominal Current Rating	Part Number	Termination Line/Load
3A	**F5900CG03**	IEC/Solder Tab
	F5900FG03	Fused IEC/Solder Tab
	F5900JG03	Switched IEC/Solder Tab
6A	**F5900CG06**	IEC/Solder Tab
	F5900FG06	Fused IEC/Solder Tab
	F5900JG06	Switched IEC/Solder Tab

F5900JG (3 and 6Amp) Dimensions

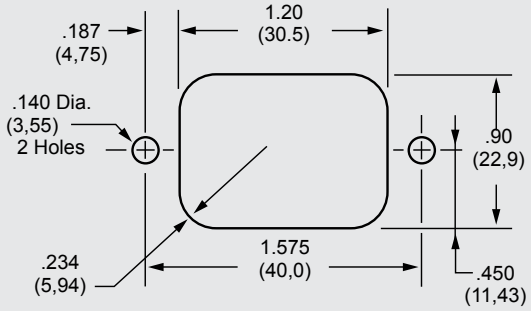
Refer to Page 42 for Standard Mounting Cutouts



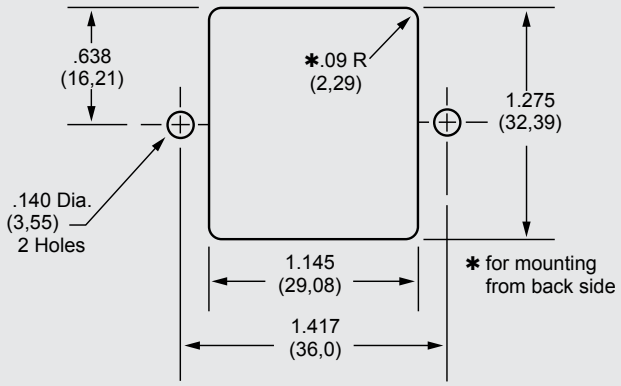
Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

Standard Mounting Cutouts

F1200CA, F1300CA, F1400CA, F1500CA, F1600CA, F1700CA



F1500FA, F1600FA,



How to Order

The Curtis part numbering system is made up of four elements. Each element denotes a specific requirement (mechanical or electrical) which, when properly sequenced, fully identifies the required catalog filter. As shown, the first five alpha/numeric characters denote the series type; the sixth character (alpha) denotes the type of line termination; the seventh character (alpha) denotes the type of load termination; the last two characters (numeric) denote the current rating.

Compose your part number as follows: Select the series required, add two alpha character for the line and load termination, followed by two numeric characters for the required current rating. For example, F1100AB06 completely identifies an F1100 series filter with quick connects on line side and wire leads on load side, with a 6-amp rating.

F1100 X X X

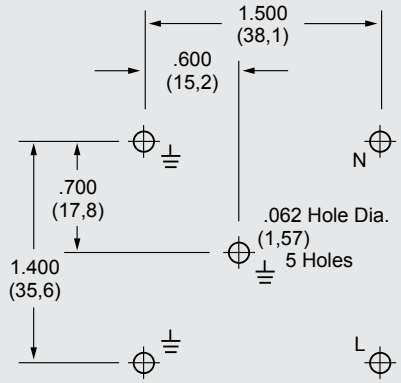
SERIES
PE = Power Entry
PM = Medical Power Entry

LINE TERMINATION
A = Quick Connects
B = Wire Leads
C = IEC Connector
D = Screw Terminals (20 & 30 amp only)
F = Fused IEC
P = Printed Circuit Pins
W = Dual Fused IEC
J = Switched IEC

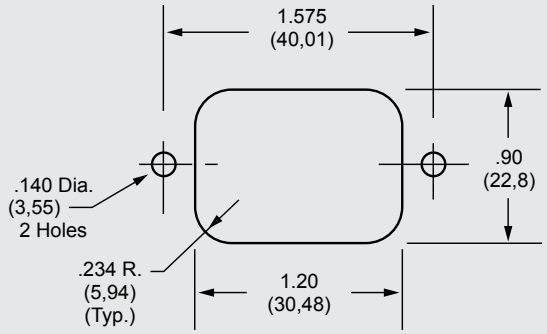
LOAD TERMINATION
A = Quick Connects
B = Wire Leads
D = Screw Terminals (20 & 30 amp only)
P = Printed Circuit Pins
S = Solder Tab

CURRENT RATING
01 = 1 Amp
03 = 3 Amps
06 = 6 Amps
10 = 10 Amps
15 = 15 Amps
20 = 20 Amps
30 = 30 Amps

F1300CP, F1600CP



F5500/5600/5700 SERIES



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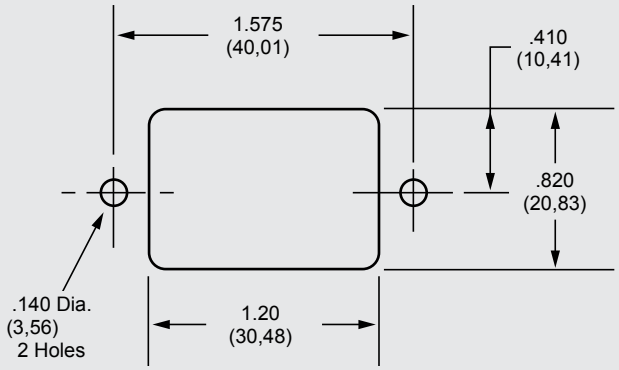
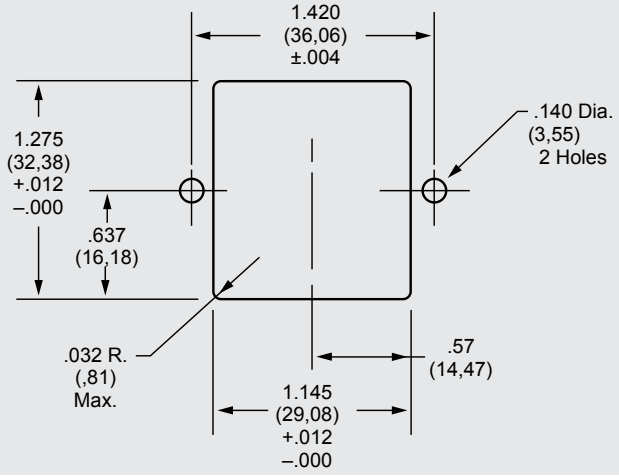
Specifications subject to change.
Dimensions are shown for reference purposes only.

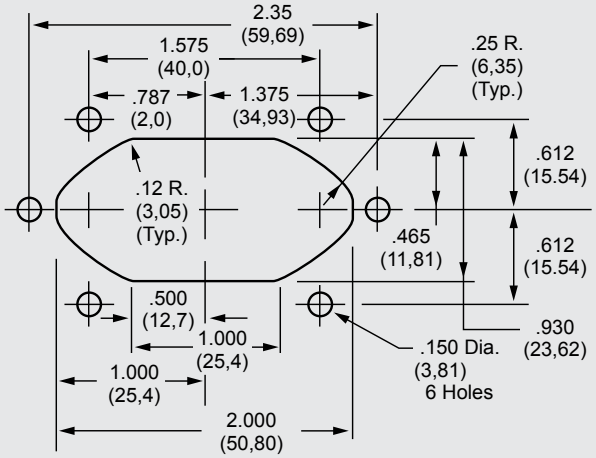
F5100 SERIES



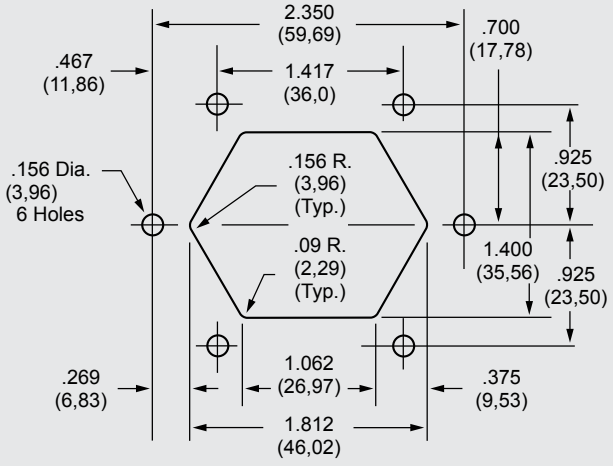
F5200 SERIES



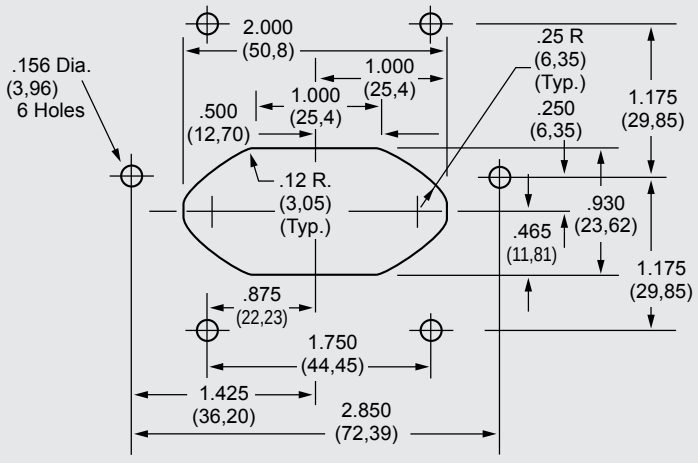
F5101 SERIES



F5201 SERIES



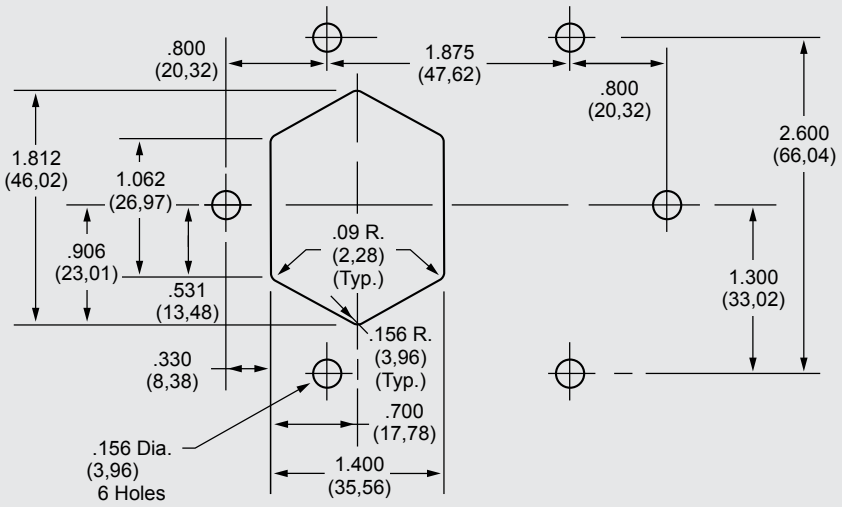
F5501/5601/5701 SERIES



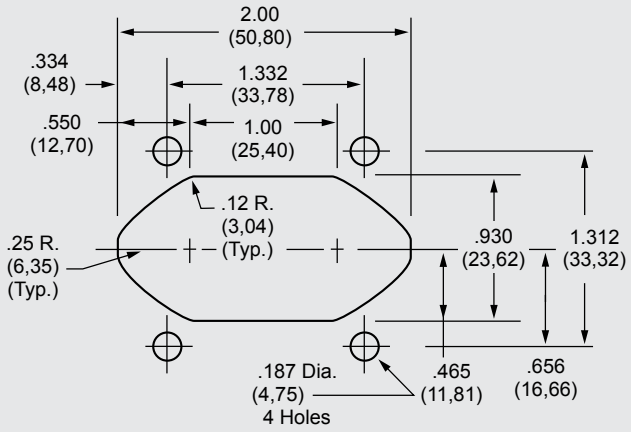
NOTE: Tolerance for all dimensions unless otherwise specified: .XXX three place ± .004, .XX two place ± 0.10

Standard Mounting Cutouts

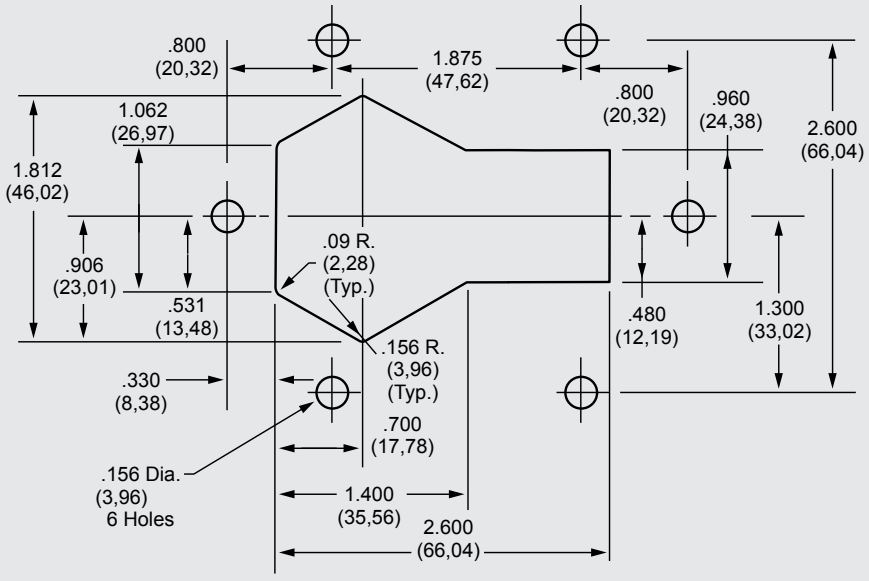
F5900FG



F5900CG



F5900JG



NOTE: Tolerance for all dimensions unless otherwise specified: .XXX three place ± .004, .XX two place ± 0.10

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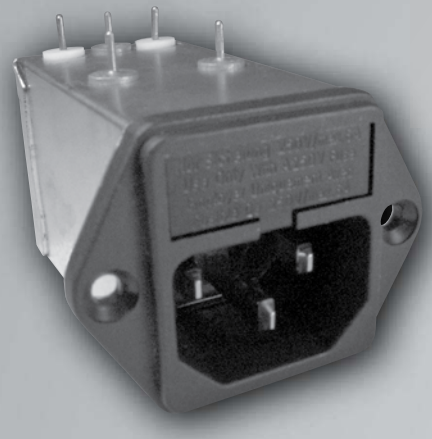
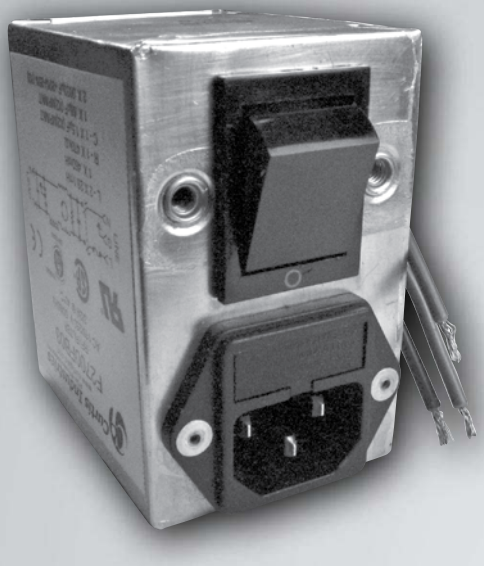
Specifications subject to change.
Dimensions are shown for
reference purposes only.

POWER ENTRY MODULES

General Purpose Combination



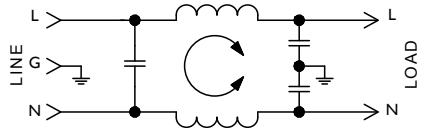


F2199/F2200 RFI Filters

Features:

- General Purpose Filters — Designed for Common Mode Emissions or Susceptibility Applications
- Integral IEC Connector in Space-Efficient Package
- Ideal for Linear Power Supplies in Digital Equipment

F2199/F2200 Simplified Schematic



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:	115VAC	250VAC
	1A	1A
	3A	3A
	6A	6A
	10A	8A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

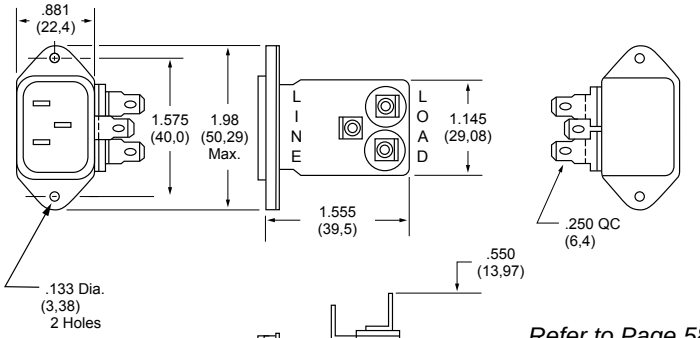
Termination:

A: QC – Quick Connect
C: IEC Receptacle

Maximum Leakage Current:

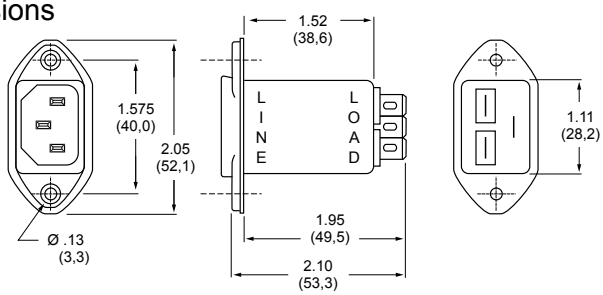
Each Line to Ground	**F2100/F2200**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Agency Approvals:

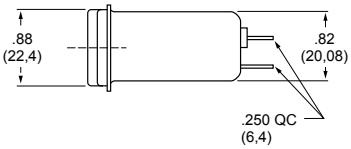


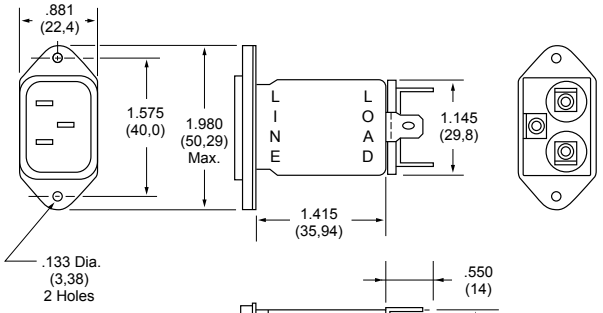
F2200CA
(1, 3 and 6Amp)
Dimensions

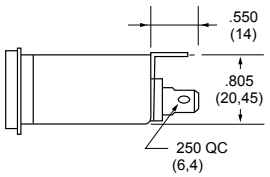
Refer to Page 58 for Standard Mounting Cutouts



F2199CA
(1, 3 and 6Amp)
Dimensions







F2199CA10
(10Amp)
Dimensions

Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
1A	**F2199CA01** **F2200CA01**	IEC/QC IEC/QC	Common **Differential**	22 —	35 **2**	40 **3**	46 **35**	50 **40**	50 **40**
3A	**F2199CA03** **F2200CA03**	IEC/QC IEC/QC	Common **Differential**	15 —	25 **2**	30 **3**	45 **35**	50 **40**	50 **40**
6A	**F2199CA06** **F2200CA06**	IEC/QC IEC/QC	Common **Differential**	10 —	20 **2**	29 **7**	43 **28**	45 **46**	50 **57**
10A	**F2199CA10**	IEC/QC	Common **Differential**	9 —	17 **2**	23 **7**	39 **12**	45 **37**	45 **60**

NOTE: Other combinations of terminals may be specified on special order.

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Specifications subject to change.
Dimensions are shown for reference purposes only.

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
6A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect

C: IEC Receptacle

Maximum Leakage Current:

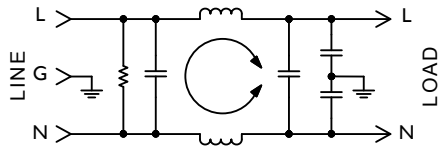
Each Line to Ground	**F2300**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Agency Approvals:

Features:

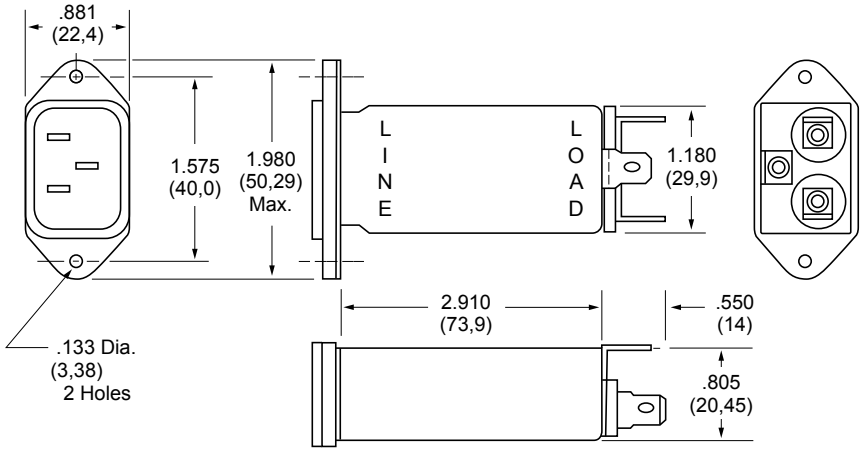
- Effective Protection from Pulsed, Intermittent or Continuous RFI for FCC “A” Applications
- High-Performance Low-Leakage Filter in Low Profile Package with Integral IEC Connector
- Increased Inductance and Line-to-Line Capacitance Provide Enhanced Common Mode and Differential Mode Attenuation

F2300CA Simplified Schematic



F2300CA
(6Amp)
Dimensions

Refer to Page 58 for Standard Mounting Cutouts

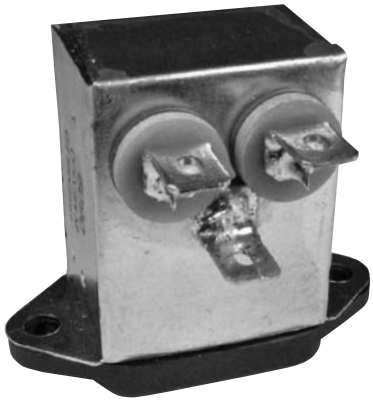


Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
6A	**F2300CA06**	IEC/QC	Common	25	37	45	45	45	45
			Differential	**12**	**30**	**50**	**65**	**65**	**60**

NOTE: Other combinations of terminals may be specified on special order.

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

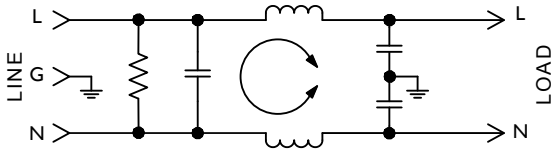
F2400/2500 RFI Filters



Features:

- Higher Performance Filters Designed for Common Mode and Differential Mode Applications
- 4X Greater Differential Mode Insertion Loss at 1 MHz than F2100/F2200 Series with No Increase in Physical Size
- Especially Suited for Use with Linear Power Supplies and FCC “A” Applications

F2400/2500 Simplified Schematic



Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	1.5A
6A	3A
10A	10A
15A	10A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect
C: IEC Receptacle

Maximum Leakage Current:

Each Line to Ground	**F2400/F2500**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Agency Approvals:

(F2400 Only) (F2500 Only)

Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F2400CA03**	IEC/QC	Common	22	35	40	46	50	50
	F2500CA03	IEC/QC	**Differential**	**8**	**18**	**24**	**40**	**50**	**40**
6A	**F2400CA06**	IEC/QC	Common	15	24	31	42	45	50
	F2500CA06	IEC/QC	**Differential**	**8**	**18**	**24**	**40**	**50**	**40**
10/15A	**F2400CA10**	IEC/QC	Common	4	10	13	28	35	40
	F2400CA15	IEC/QC	**Differential**	**2**	**8**	**15**	**30**	**35**	**35**

NOTE: Other combinations of terminals may be specified on special order.

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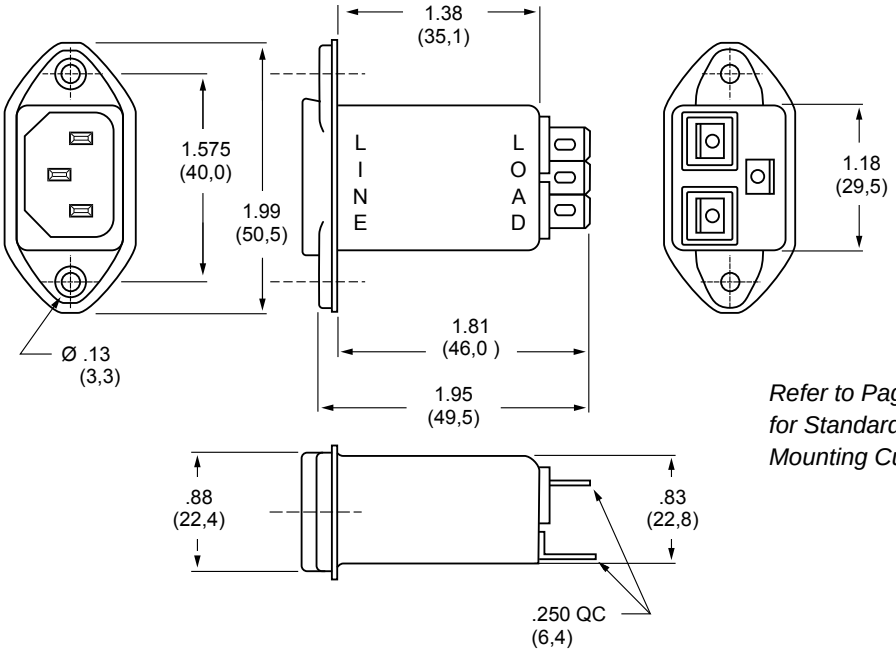
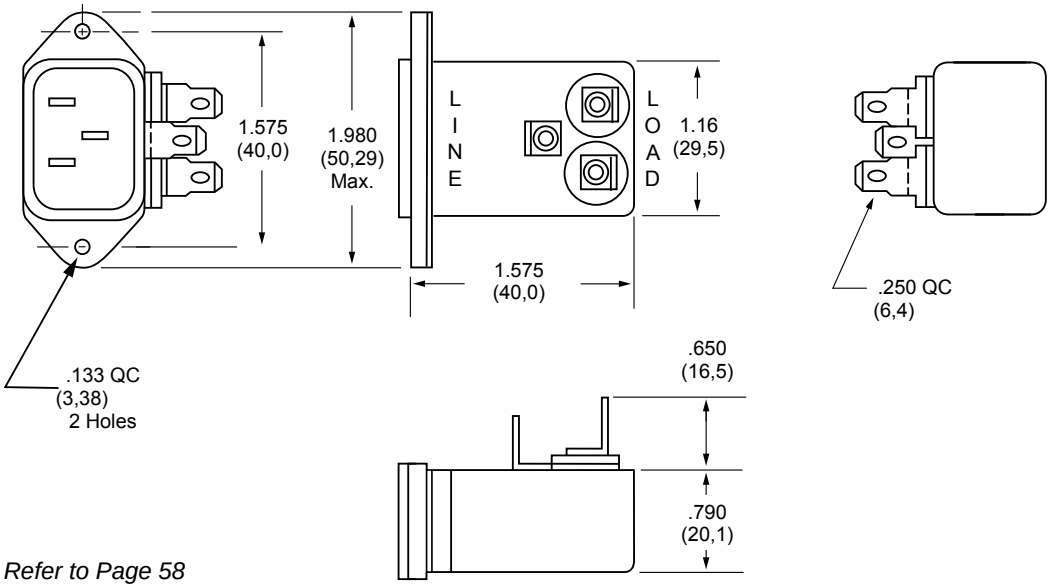
Specifications subject to change.
Dimensions are shown for reference purposes only.

F2400CA (3, 6, 10 and 15Amp) Dimensions



Refer to Page 58 for Standard Mounting Cutouts

F2500CA (3 and 6Amp) Dimensions



Refer to Page 58 for Standard Mounting Cutouts

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F2600 RFI Filters

Features:

- General Purpose “L-Type” Circuit Effective in Reducing Both Incoming and Outgoing Powerline Noise Levels in FCC “A” Applications
- Integral 5 X 20mm Single or Dual Fused IEC Connector
- Optional SST Switched IEC Connector
- All Series Available in Labor-Saving PC Mounted Case Style

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	3A
6A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max at rated current

Humidity Range: 0% to 95% R.H.

Termination:

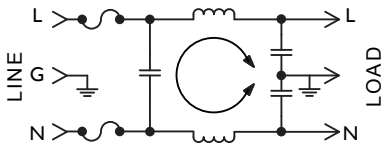
A: QC – Quick Connect
F: Fused IEC
J: Switched IEC
P: PC – P.C. Board
W: Dual Fused IEC

Maximum Leakage Current:

Each Line to Ground	**F2600**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Agency Approvals:

F2600F Simplified Schematic



Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F2600FA03** **F2600FP03**	Fused IEC/QC Fused IEC/PC	Common **Differential**	21 **8**	35 **18**	41 **24**	50 **40**	50 **50**	50 **40**
6A	**F2600FA06** **F2600FP06**	Fused IEC/QC Fused IEC/PC	Common **Differential**	18 **8**	34 **18**	41 **24**	45 **40**	45 **50**	45 **50**
3A	**F2600WA03** **F2600WP03**	Dual Fused IEC/QC Dual Fused IEC/PC	Common **Differential**	21 **8**	35 **18**	41 **24**	45 **40**	45 **50**	50 **40**
6A	**F2600WA06** **F2600WP06**	Dual Fused IEC/QC Dual Fused IEC/PC	Common **Differential**	18 **8**	34 **18**	41 **24**	40 **40**	40 **50**	45 **50**
3A	**F2600JA03** **F2600JP03**	Switched IEC/QC Switched IEC/PC	Common **Differential**	21 **8**	35 **18**	41 **24**	45 **40**	45 **50**	50 **40**
6A	**F2600JA06** **F2600JP06**	Switched IEC/QC Switched IEC/PC	Common **Differential**	18 **8**	34 **18**	41 **24**	40 **40**	40 **50**	45 **50**

NOTE: Other combinations of terminals may be specified on special order.

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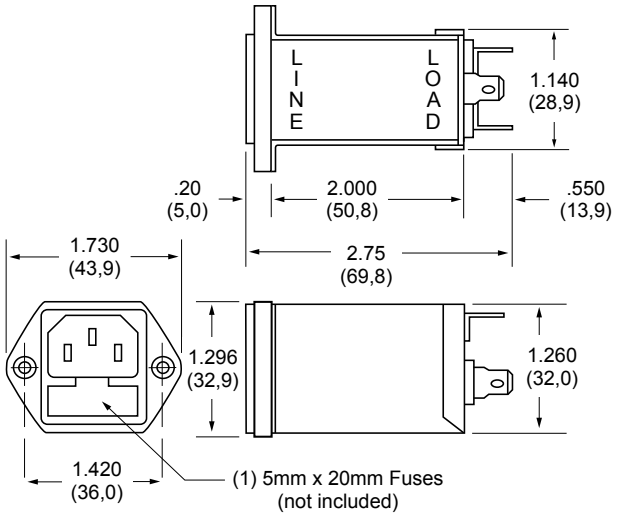
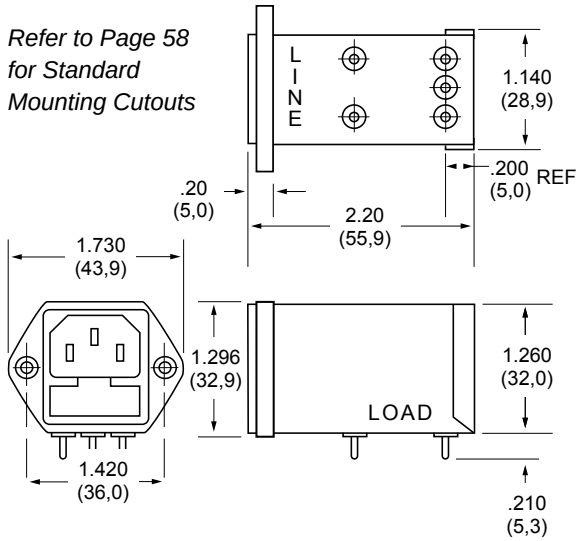
Specifications subject to change.
Dimensions are shown for reference purposes only.

F2600FA (3 and 6Amp) Dimensions



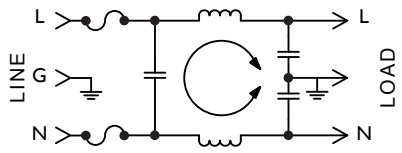
F2600FP (3 and 6Amp) Dimensions

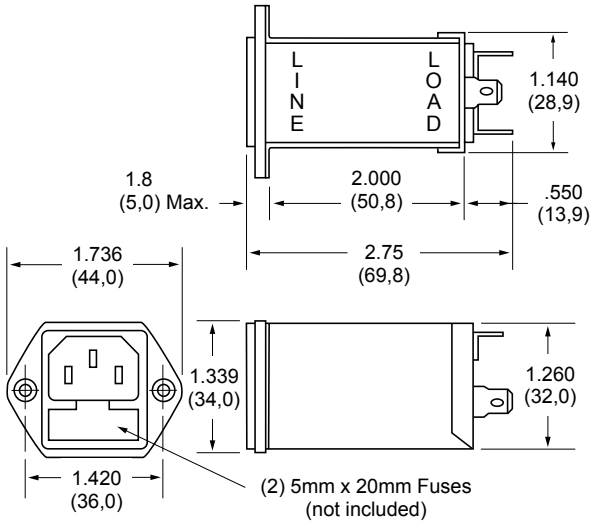
Refer to Page 58 for Standard Mounting Cutouts



F2600WA (3 and 6Amp) Dimensions

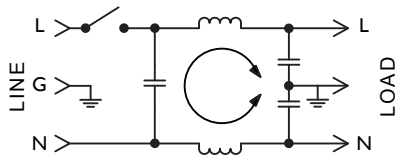
F2600W Simplified Schematic

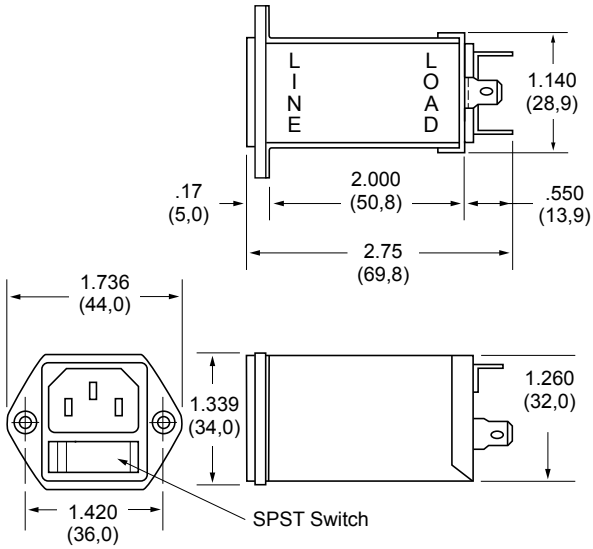




F2600JA (3 and 6Amp) Dimensions

F2600J Simplified Schematic





Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F2700 RFI Filters

Features:

- Designed for FCC “B” and VDE “B” Switching Power Supply Applications
- Very High Inductance Design with Differential Mode Choke to Provide Improved Performance Below 100KHz
- Compact, Space-Efficient Package Available in 3 and 6Amp Ratings
- Also Available with Integal Fused IEC Connector and “ON/OFF” Power Switch

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	2A
6A	4A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at rated current

Humidity Range: 0% to 95% R.H.

Termination:

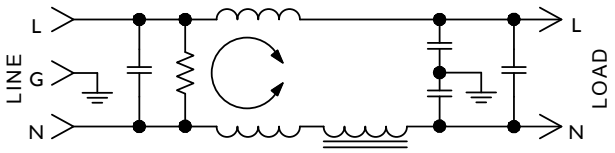
A: QC – Quick Connect
B: Wire
C: IEC Receptacle
F: Fused IEC

Maximum Leakage Current:

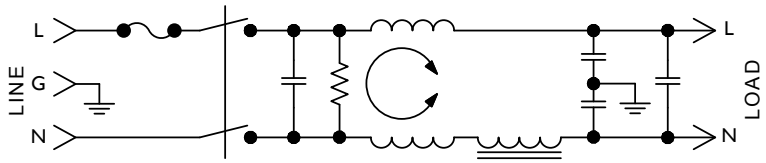
Each Line to Ground	**F2700**
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Agency Approvals:

F2700 Without Switch Simplified Schematic



F2700 Without Switch Simplified Schematic (3Amp Only)



Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)								
			MODE	Frequency - MHz .01	.02	.05	.15	.50	1.0	5.0	10	30
3A	**F2700AA03**	QC/QC	Common	20	27	36	45	42	42	42	40	38
			Differential	**5**	**27**	**52**	**70**	**70**	**70**	**70**	**60**	**58**
	F2700CA03 **F2700FB03**	IEC/QC Fused IEC/Wire	Common	20	27	36	45	42	42	42	40	38
			Differential	**5**	**27**	**52**	**70**	**70**	**70**	**70**	**60**	**58**
6A	**F2700AA06** **F2700CA06**	QC/QC IEC/QC	Common	10	18	28	39	42	45	45	45	45
			Differential	**5**	**20**	**48**	**70**	**70**	**70**	**70**	**70**	**65**

NOTE: Other combinations of terminals may be specified on special order.

Curtis Industries
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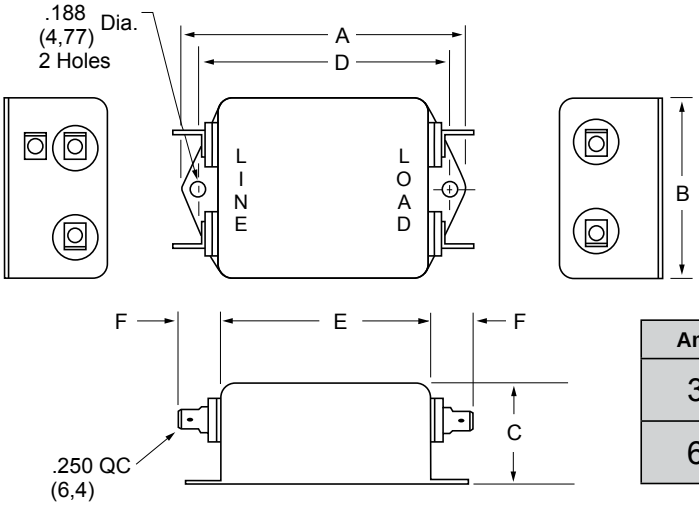
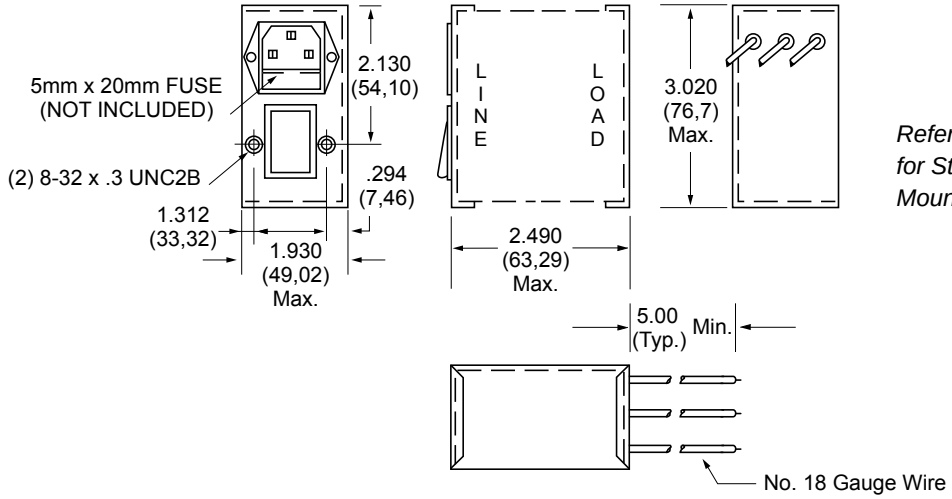
Specifications subject to change.
Dimensions are shown for reference purposes only.

F2700AA (3 and 6Amp) Dimensions



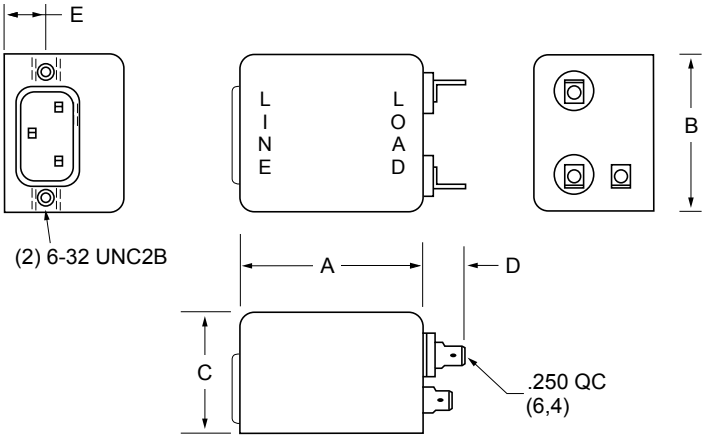
Amps	A	B	C	D	E	F
3A	3.315 (84,2)	2.000 (50,8)	1.500 (38,1)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
6A	4.440 (112,8)	2.250 (57,2)	1.750 (44,5)	4.063 (103,2)	3.620 (91,9)	.550 (14,0)

F2700FB03 (3Amp) Dimensions



Refer to Page 58 for Standard Mounting Cutouts

F2700CA (3 and 6Amp) Dimensions



Refer to Page 58 for Standard Mounting Cutouts

Amps	A	B	C	D	E
3A	2.880 (73,2)	2.125 (54,0)	1.719 (43,6)	.550 (14,0)	.575 (14,6)
6A	3.750 (95,2)	2.250 (57,1)	1.750 (44,4)	.550 (14,0)	.640 (16,29)

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	3A
6A	6A

Current Overload: 6X for 8 Seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at Rated Current

Humidity Range: 0% to 95% R.H.

Termination:

- IEC Receptacle
- Wire Wrap/Solder

Maximum Leakage Current:

Each Line to Ground	PE7, PE 8
115VAC, 60Hz:	0.25mA
250VAC, 50Hz:	0.40mA

Voltage Select Card: Installed in 120VAC position unless otherwise specified

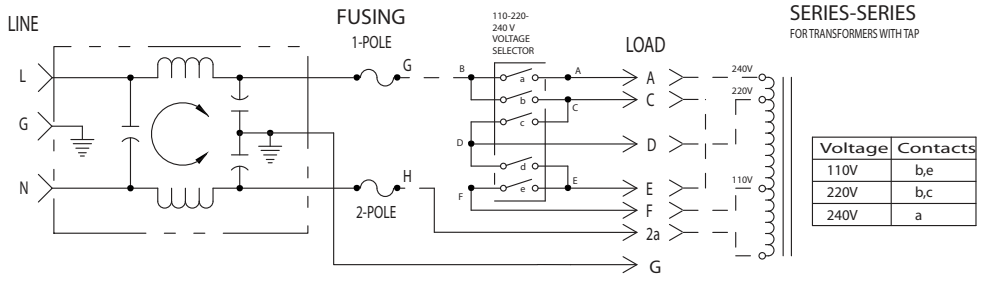
Agency Approvals:

Refer to Page 55 for Ordering Instructions

Features:

- RFI Filter Module Combines IEC Connector, Fusing, and Voltage Select Features in One Unit
- PE7 Series Filters Provide 20% More Differential Mode Attenuation Than Comparable Units
- Accepts Either U.S. or European Standard Fuse Sizes

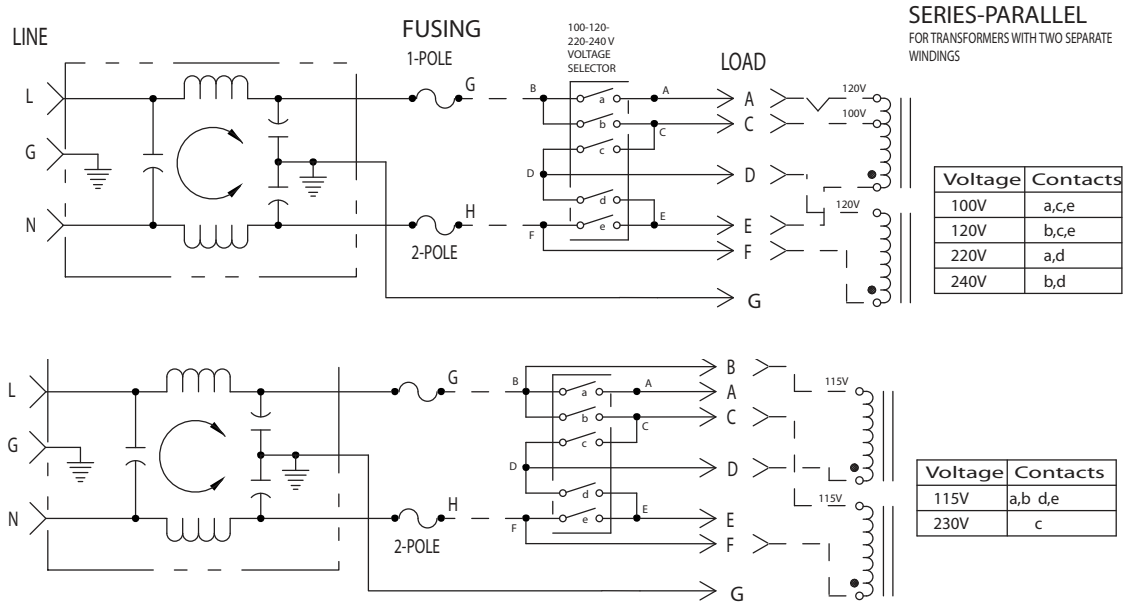
PE7 Series Simplified Schematic



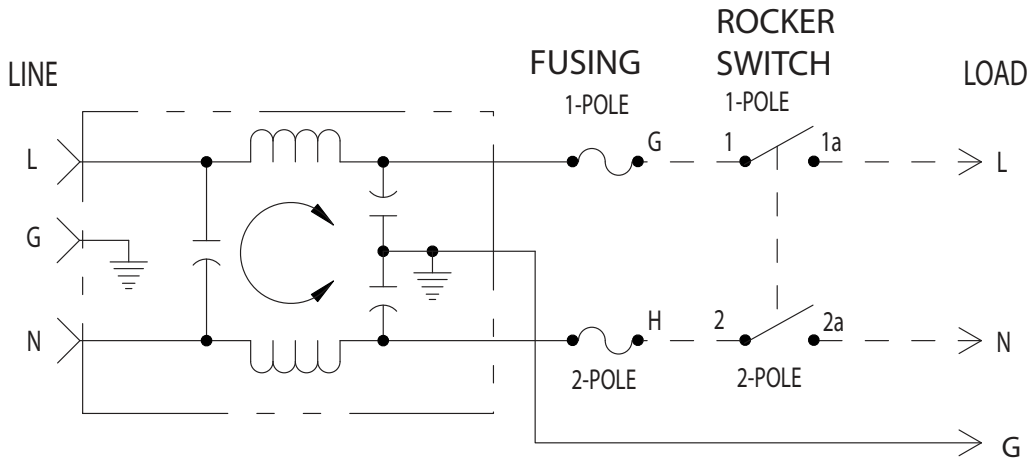
Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**PE7XXX03** **PE8XXX03**	IEC/Solder Tabs	Common **Differential**	18 **8**	24 **18**	30 **24**	45 **46**	45 **50**	50 **40**
6A	**PE7XXX06** **PE8XXX06**	IEC/Solder Tabs	Common **Differential**	10 **8**	19 **18**	24 **24**	39 **39**	44 **40**	50 **40**

Specifications subject to change.
Dimensions are shown for reference purposes only.

PE7 Series Simplified Schematic

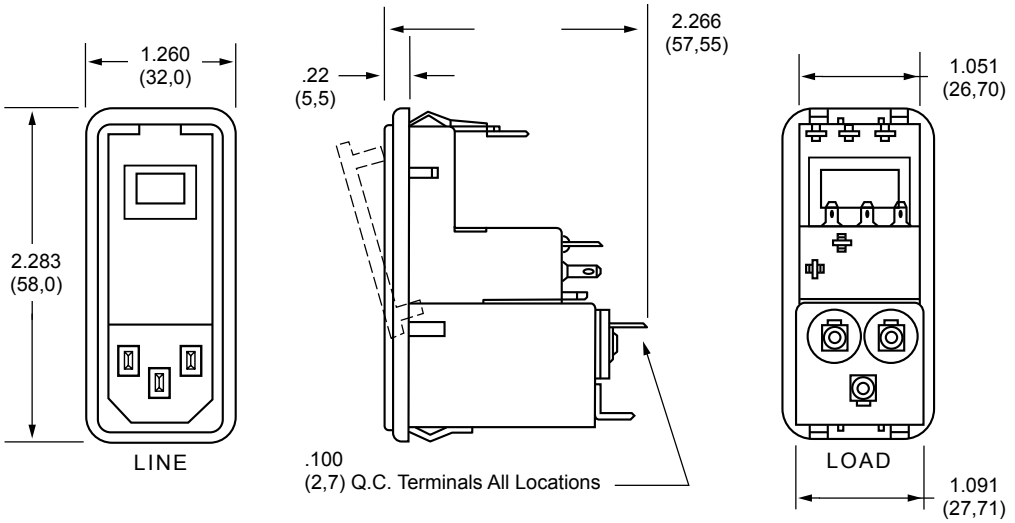


PE8 Series Simplified Schematic



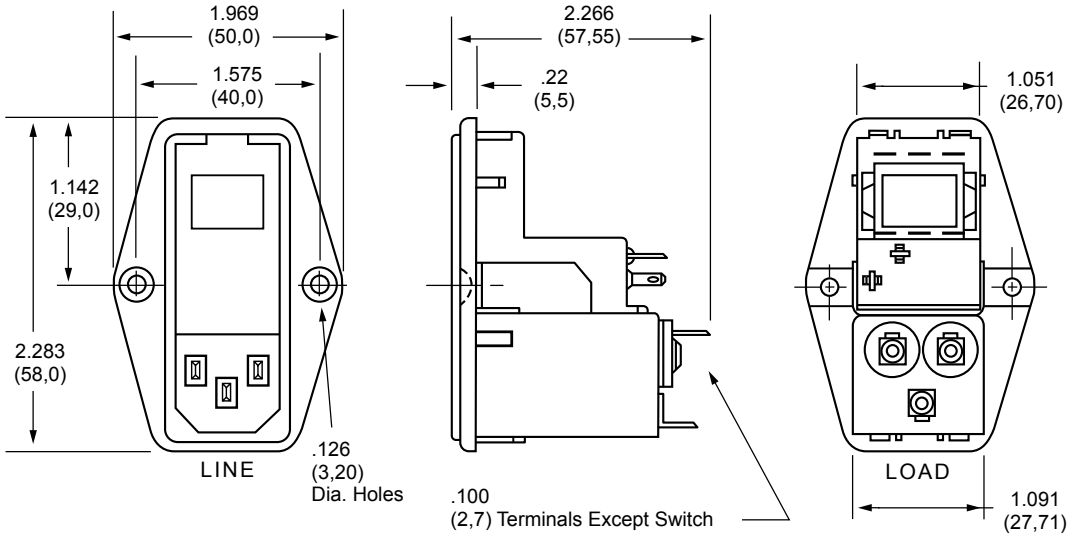
PE7/PE8
Snap-Mount Series
(3 and 6Amp) Dimensions

Refer to Page 55 for Standard Mounting Cutouts



PE7/PE8
Screw-Mount Series
(3 and 6Amp) Dimensions

Refer to Page 55 for Standard Mounting Cutouts



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Specifications subject to change.
Dimensions are shown for reference purposes only.

How to Order

PE7
PE8 **X** **X** **X** **X** **X**

SERIES
PE = Power Entry

MOUNTING METHOD & FUSING
0 = Snap Mount Metric Fuse
1 = Snap Mount U.S. Fuse
2 = Snap Mount 2 Metric Fuse
3 = Snap Mount 2 U.S. Fuses
6 = Screw Mount Metric Fuse
7 = Screw Mount U.S. Fuse
8 = Screw Mount 2 Metric Fuses
9 = Screw Mount 2 U.S. Fuses

VOLTAGE SELECTOR
0 = No Selector (PE80 Series)
1 = 110-220-240 VAC
2 = 100-120-220-240 VAC
3 = 115-230 VAC

SWITCH
0 = No Switch
1 = SPST Rocker Switch w/Q.C.
2 = DPST Rocker Switch w/Q.C.

OPTIONS
(Consult Factory)
0 = Standard Units

CURRENT RATING
3 = 3 AMP
6 = 6 AMP

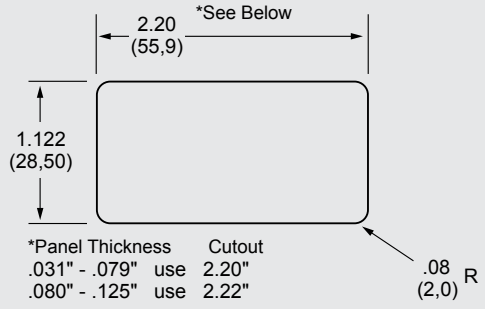
INSTALLATION INSTRUCTION IMPORTANT – CHANGING FUSE/VOLTAGE

PE7/PE8
To change fuse, remove power cord and open the front cover on the module. Remove fuse holder and replace fuse. Reinsert fuse holder and close cover. To change the operating voltage on the PE7 Series, remove the power cord and open front cover. Rotate voltage select wheel until desired voltage appears in window of cover.

- Filter shipped without fuse.

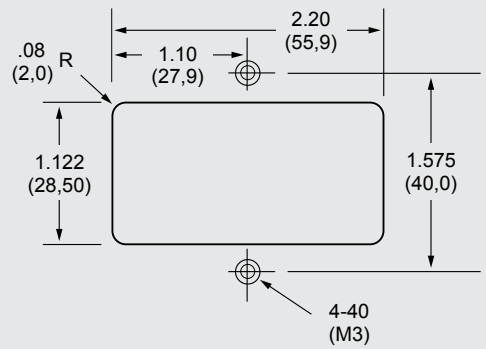
Always use caution when selecting and changing fuses and voltage requirements. Curtis Industries is not responsible for malfunction due to improper installation/selection of fuse and/or voltage select.

PE7/PE8 Snap-Mount Series



*Panel Thickness Cutout
.031" - .079" use 2.20"
.080" - .125" use 2.22"

PE7/PE8 Screw Mount Series



Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

Features:

- RFI Filter Module Combines IEC Connector, Fusing, Optional Voltage Select and On/Off Switch into a Single, Space-Efficient Assembly
- Enhanced Low Frequency Response with No Resonant Peaks
- Fully Shielded for Radiative Noise Control
- Accepts Either U.S. or European Standard Fuse Sizes. Dual or Single Power Line Fusing

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
10A	10A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	2250VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max at rated current

Humidity Range: 0% to 95% R.H.

Termination:

- QC – Quick Connect
- IEC Receptacle

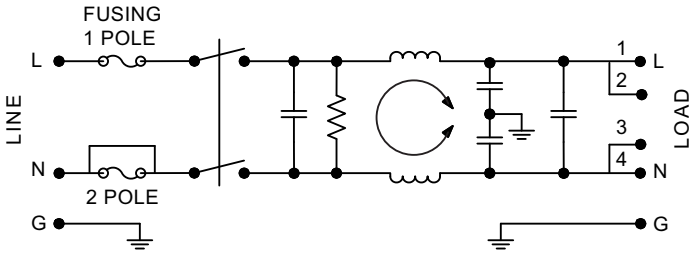
Maximum Leakage Current:

Each Line to Ground	PE1	PE1-PO
115VAC, 60Hz:	0.25mA	0.4mA
250VAC, 50Hz:	0.40mA	.75mA

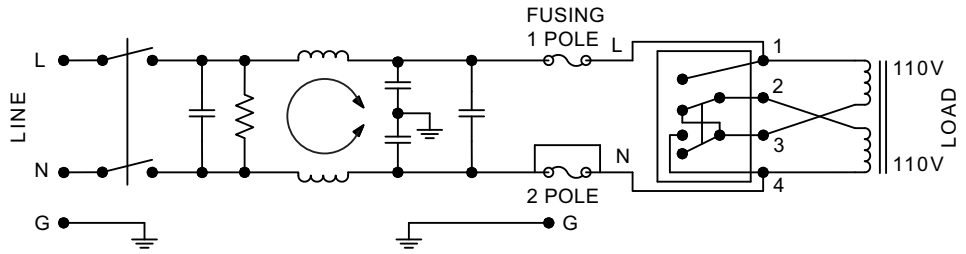
Voltage Select Card: Installed in 120VAC position unless otherwise specified

Agency Approvals:

PE1 Series Simplified Schematic without Voltage Selector



PE1 Series Simplified Schematic with Voltage Selector



Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)							
			MODE	Frequency - MHz						
				.05	.15	.50	.10	5.0	10	30
10A	**PE1XXX10**	IEC/QC	Common	10	20	30	38	45	50	50
			Differential	**10**	**20**	**30**	**35**	**55**	**60**	**55**
	PE1XXXP0	IEC/QC	Common	13	24	33	38	48	54	54
			Differential	**10**	**20**	**30**	**35**	**65**	**65**	**55**

NOTE: Other combinations of terminals may be specified on special order.

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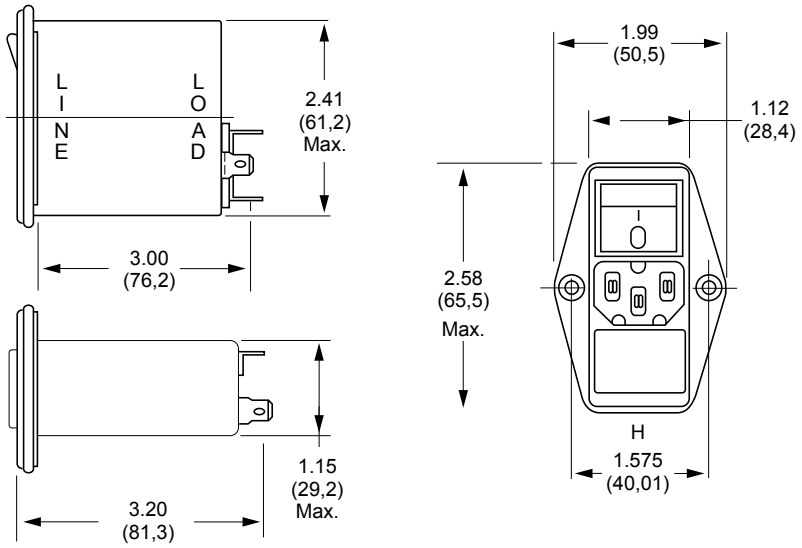
Specifications subject to change.
Dimensions are shown for reference purposes only.

PE1
(10Amp)
Dimensions

Refer to Standard Mounting Cutouts on Page 58



How to Order

PE1 X X X X 0

SERIES
PE = Power Entry
PM = Medical Power Entry

MOUNTING METHOD & FUSING
6 = Screw Mount Metric or U.S. Fuse*
8 = Screw Mount 2 Metric or U.S. Fuses
*U.S. Fuse not available without voltage selector

VOLTAGE SELECTOR
0 = No Selector
3 = 115-230 VAC

OPTIONS
(Consult Factory)
1 = Standard Units
P = High Performance Insertion Loss

SWITCH
0 = No Switch
1 = SPST Rocker Switch
2 = DPST Rocker Switch

CURRENT RATING
0 = 10 AMP

INSTALLATION INSTRUCTION IMPORTANT – CHANGING FUSE/VOLTAGE

PE1

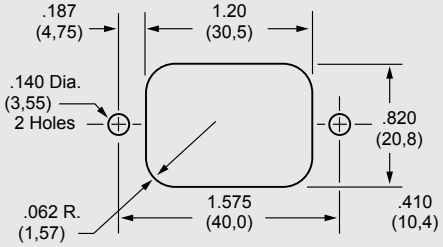
To change fuse, remove power cord. Remove voltage selector and replace fuse. Reinsert fuse holder. To change the operating voltage on the PE1 Series, remove the power cord and rotate fuse holder block until desired voltage aligns with the mark on the module housing.

- Filter shipped without fuse.

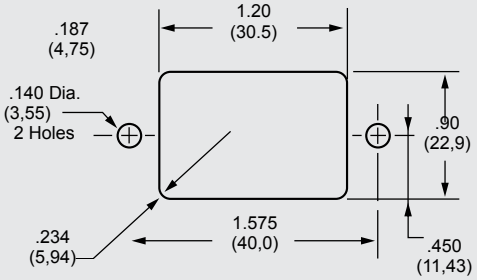
Always use caution when selecting and changing fuses and voltage requirements. Curtis Industries is not responsible for malfunction due to improper installation/selection of fuse and/or voltage select.

Standard Mounting Cutouts

F2199CA, F2200CA, F2300CA, F2400CA, F2500CA, F2700CA, F3100CA, F3200CA, F3400CA, F3500CA

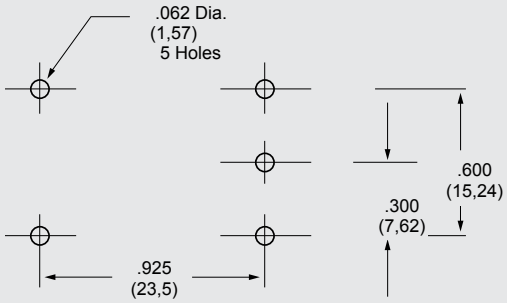


Back Mounting

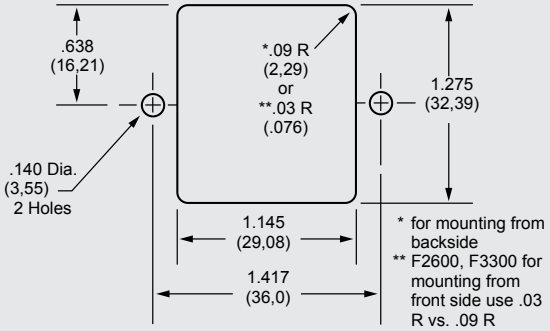


Front Mounting

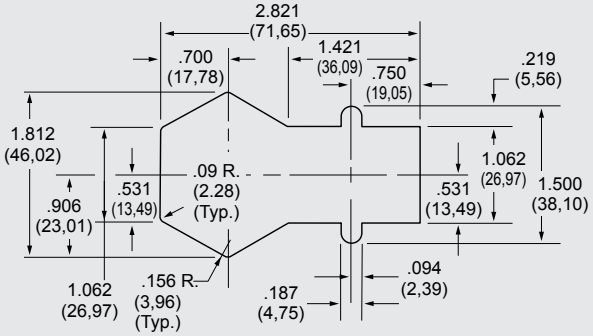
F2600FP, F3300FP



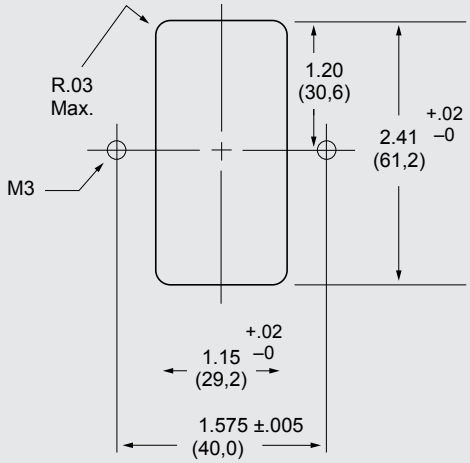
F2600, F3300



F2700FB



PE1 Screw Mount Series



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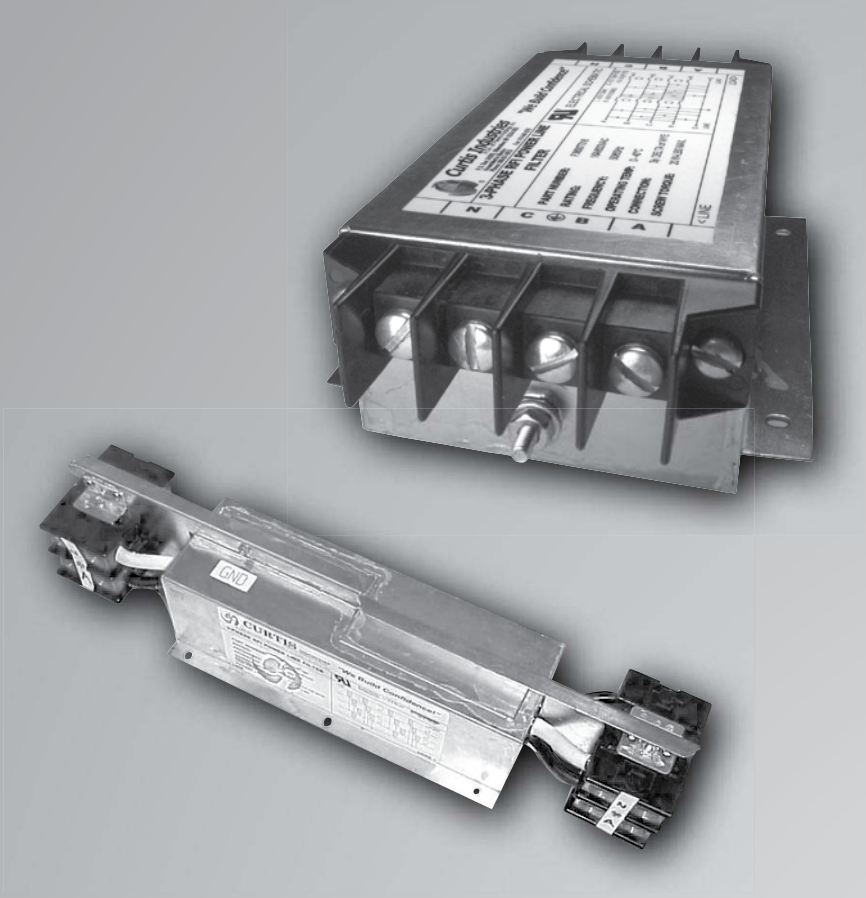
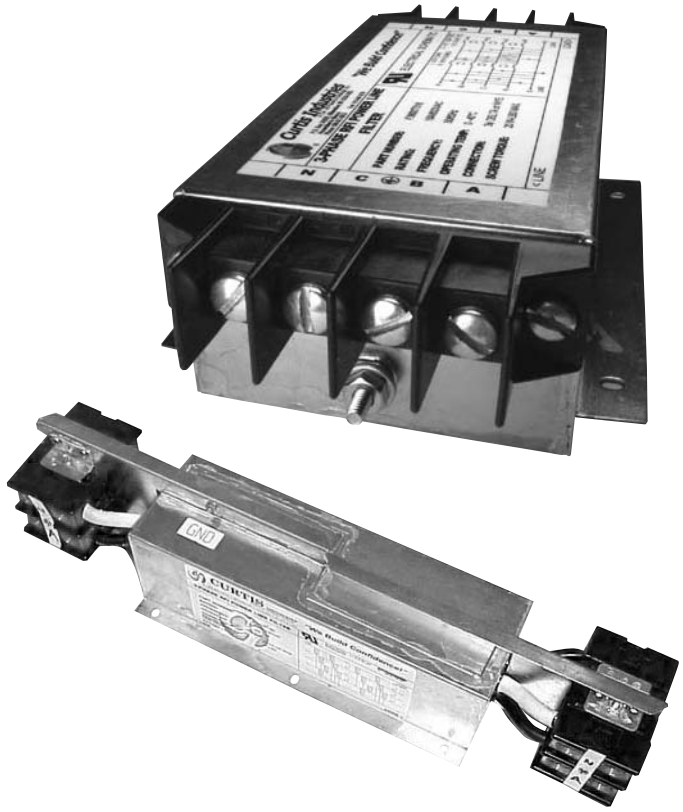
Specifications subject to change.
Dimensions are shown for reference purposes only.

THREE-PHASE FILTERS





Specifications:

Rated Voltage: 480 VAC - 50/60 Hz
600 VAC - 50/60 Hz

Rated Current: 480 VAC - 9A to 608A
600 VAC - 8A to 600A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):	**480VAC**	**600VAC**
Line to Ground	2210 VDC	3150 VDC
Line to Line	2780 VDC	3150 VDC

Insulation Resistance: 1000 MΩ min. at 250 VDC

Ambient Temperature: 0°C to 40°C (32°F to 104°F)

Humidity Range: 0% to 95% R.H.

Termination:

- Wire
- Terminal Blocks
- Pressure Terminal Blocks

Weight: 3 to 65lbs (1.36 to 29.50kg)

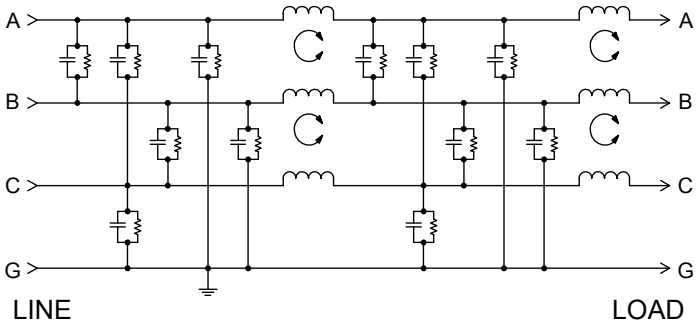
Agency Approvals:

(F3480 Only)

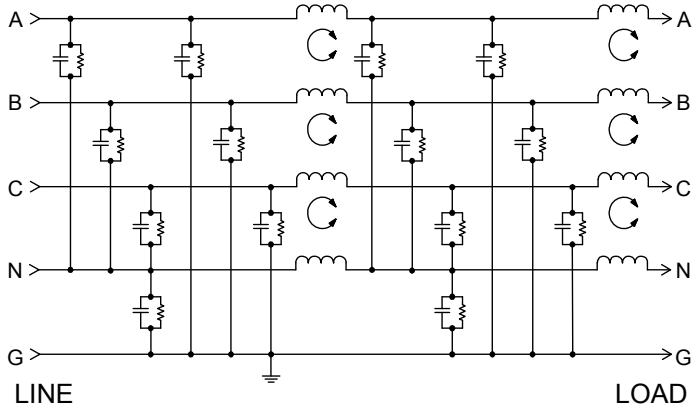
Designed to attenuate conducted interference in a small package providing excellent insertion loss, the F3480/F3600 series filters will provide effective EMC solutions up to 600A at 600VAC and power applications up to 360kVA. With effective noise suppression in the critical 150kHz-30MHz range, this advanced 2-stage filter line will support both Delta and Wye connected loads. Curtis three phase filters are designed to provide EMC solutions in many applications such as:

- Motor
- Motor Control Centers
- Facility Filters
- Uninterruptible Power Supplies
- Power Conditioning Units
- Laser Welders
- Automated Test Equipment
- Robotics
- CNC Machinery
- Elevators
- Industrial Ovens

F3480 Simplified Schematic



F3600 Simplified Schematic



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Specifications subject to change.
Dimensions are shown for reference purposes only.

Ordering Information:

F3600 T 600

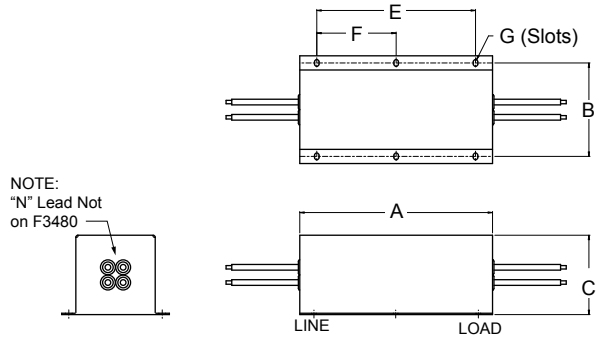
- F3600 — 3-Phase Series:
  - F3480 = 480 VAC
  - F3600 = 600 VAC
- T — T = Terminal Blocks; B = Wire Leads; A = .250 Q.C. Terminal (8 - 50A Only)
- 600 — Current Rating 008 - 608 (Refer to Charts)

F3480 Series - 480 VAC

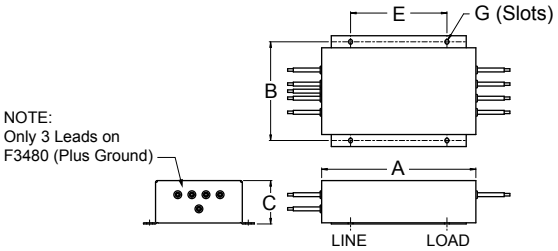
Rated Current (Amps)	Part Number	Maximum Leakage Each L/G (250V, 60Hz)	Minimum Insertion Loss (dB)	Frequency (MHz)	.15	.5	1	5	10	30	Dimensions (Inches) A	B	C	D	E	F	G
608A	F3480T608	140mA									18.75	5.25	5.93	41.25	16.00	8.00	.28 x .40
	F3480B608		CM	60	70	70	60	45	30		18.75	5.25	4.50	--			
			DM	30	40	40	35	30	20								
322A	F3480T322	90mA									10.50	5.25	4.63	23.50	8.00	4.00	.28 x .40
	F3480B322		CM	60	70	70	65	55	45		10.50	5.25	4.50	--			
			DM	30	40	40	40	35	20								
185A	F3480T185	90mA									11.25	4.12	4.25	20.25	10.00	5.00	.20 x .30
	F3480B185		CM	60	70	70	65	55	45		11.25	4.12	3.50	--			
			DM	30	35	35	45	40	30								
135A	F3480T136	80mA									8.50	4.12	4.25	16.00	7.00	3.50	.20 x .30
	F3480B136		CM	60	65	70	60	50	40		8.50	4.12	3.50	--			
			DM	25	35	45	30	30	20								
112A	F3480T112	80mA									8.50	4.12	4.25	16.00	7.00	3.50	.20 x .30
	F3480B112		CM	60	65	70	60	50	40		8.50	4.12	3.50	--			
			DM	25	35	45	30	30	20								
80A	F3480T080	30mA									8.50	4.12	4.25	16.00	7.00	3.50	.20 x .30
	F3480B080		CM	60	70	70	65	55	45		8.50	4.12	3.50	--			
			DM	15	25	45	40	40	30								
60A	F3480T060	30mA									8.50	4.12	4.25	16.00	7.00	3.50	.20 x .30
	F3480B060		CM	60	70	70	65	55	45		8.50	4.12	3.50	--			
			DM	15	25	45	40	40	30								
50A	F3480A050	15mA									8.00	5.12	2.25	--	5.00	--	.19 x .25
	F3480B050		CM	60	75	80	75	70	50					--			
	F3480T050		DM	10	40	50	50	50	40					10.10			
32A	F3480A032	7mA									8.00	5.12	2.25	--	5.00	--	.19 x .25
	F3480B032		CM	60	70	80	75	65	45					--			
	F3480T032		DM	10	45	50	50	50	40					10.10			
16A	F3480A016	3mA									6.00	3.88	2.00	--	4.00	--	.16 x .20
	F3480B016		CM	50	70	80	75	65	50					--			
	F3480T016		DM	10	50	50	40	40	40					10.10			
9A	F3480A009	3mA									6.00	3.88	2.00	--	4.00	--	.16 x .20
	F3480B009		CM	60	80	80	70	60	50					--			
	F3480T009		DM	30	45	50	50	50	50					10.10			

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F3480B & F3600B Dimensions

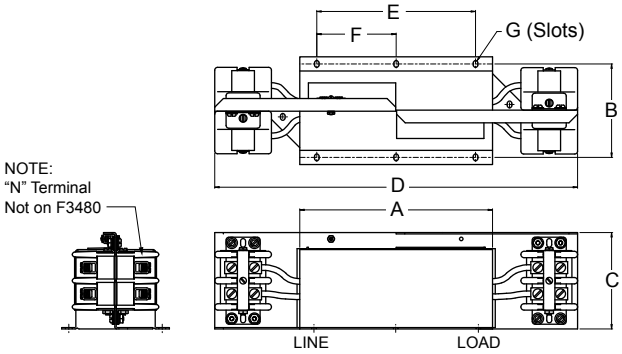


60A & Above

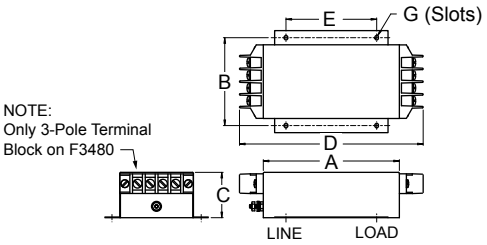


50A & Below

F3480T & F3600T Dimensions



60A & Above



50A & Below

F3600 Series - 600 VAC

Rated Current (Amps)	Part Number	Maximum Leakage Each L/G (250V, 60Hz)	Minimum Insertion Loss (dB)	Frequency (MHz) .15	.5	1	5	10	30	Dimensions (Inches) A	B	C	D	E	F	G
600A	F3600T600	120mA								18.75	5.25	5.93	41.25	16.00	8.00	.28 x .40
	F3600B600		CM	60	60	50	50	40	30	18.75	5.25	4.50	--			
			DM	20	35	35	30	25	20							
300A	F3600T300	60mA								10.50	5.25	5.93	26.50	8.00	4.00	.28 x .40
	F3600B300		CM	60	60	50	50	40	30	10.50	5.25	4.50	--			
			DM	25	30	35	45	30	20							
180A	F3600T180	60mA								11.25	4.12	4.25	20.25	10.00	5.00	.20 x .30
	F3600B180		CM	60	60	60	60	50	40	11.25	4.12	3.50	--			
			DM	20	30	35	45	40	30							
80A	F3600T080	30mA								8.50	4.12	4.25	16.00	7.00	3.50	.20 x .30
	F3600B080		CM	60	60	60	60	50	40	8.50	4.12	3.50	--			
			DM	15	25	25	40	40	30							
45A	F3600A045	10mA								8.00	5.12	2.25	--	5.00	--	.19 x .25
	F3600B045		CM	60	60	80	70	60	45				--			
	F3600T045		DM	10	10	15	50	40	30				10.10			
25A	F3600A025	8mA								8.00	5.12	2.25	--	5.00	--	.19 x .25
	F3600B025		CM	60	60	80	70	60	45				--			
	F3600T025		DM	5	5	30	50	40	30				10.10			
16A	F3600A016	4mA								6.00	3.88	2.00	--	4.00	--	.16 x .20
	F3600B016		CM	50	70	80	70	60	45				--			
	F3600T016		DM	5	5	35	40	40	40				8.10			
8A	F3600A008	4mA								6.00	3.88	2.00	--	4.00	--	.16 x .20
	F3600B008		CM	60	70	80	70	60	45				--			
	F3600T008		DM	5	10	50	40	40	40				8.10			

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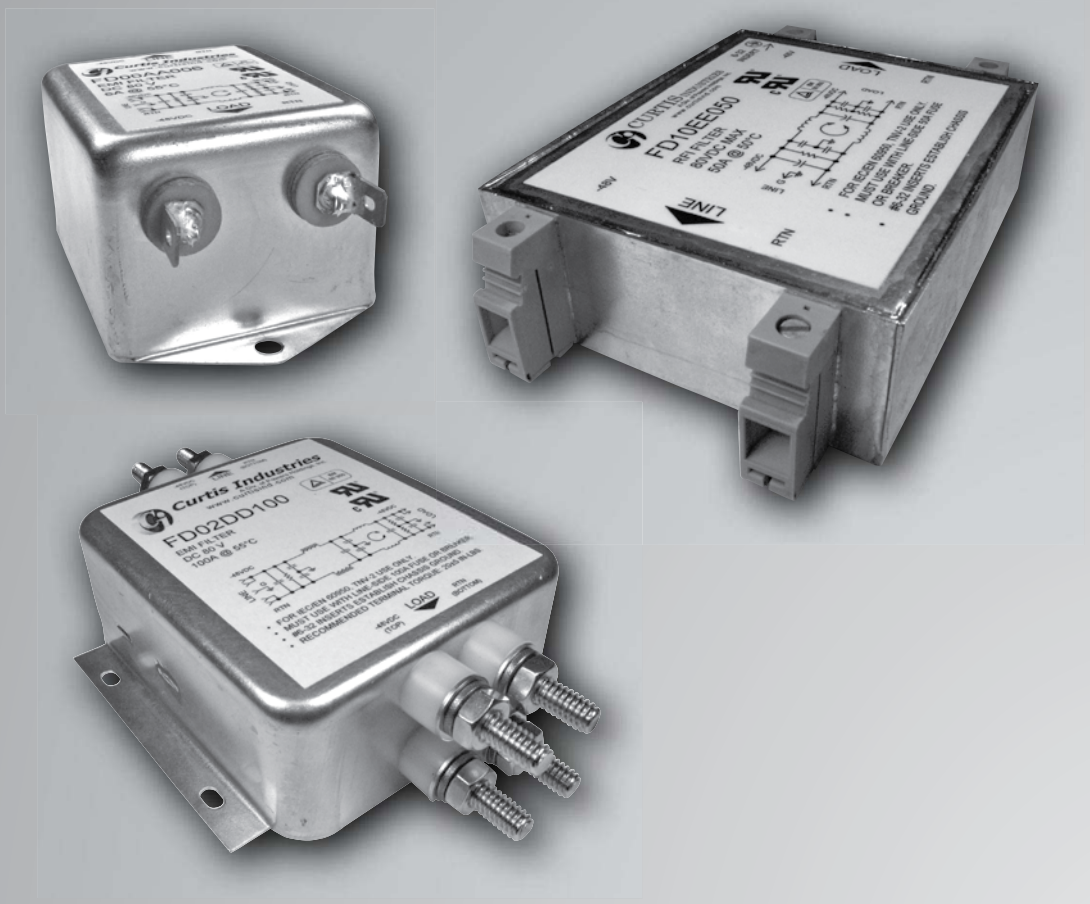
Dimensions are shown for
reference purposes only.

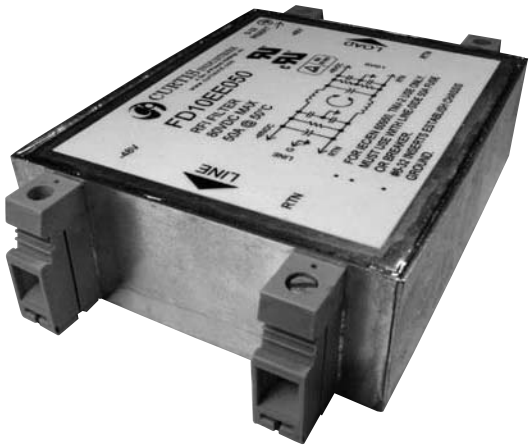
DC FILTERS

General Purpose

High Performance



FD Series Filters



The FD Series of DC filters are designed as a general purpose line of filters for DC applications. They are designed to comply with UL/EN 60950 and UL 1459, CISPER 22 and Telecordia (Bellcore) GR-1089 at 25Amps and above. These filters are available with and without circuit breakers for additional protection.

The FD Series is a compact size that can filter up to 300MHz ideally suited for the telecom-datacom market. The FD0 Series is available from 6Amps to 100Amps in the smallest, economical package. The FD02 is a high frequency filter up to 3GHz (3,000MHz) in a compact package.

These filters are ideally used in communications and central office equipment.

- Power Supplies for Communications Equipment
- Network Routing Equipment
- Switching Equipment
- Base Stations
- Modems
- Services
- Ethernet Hubs

Specifications:

Rated Voltage: 80VDC Maximum

Rated Current: 6A
10A
20A
25A
50A
75A
100A

Current Overload: 6X for 8 seconds

Hi-Pot Rating (1 min):

Line to Ground	1060VDC
Line to Line	100VDC

Insulation Resistance: 1000 MΩ at 80VDC

Ambient Temperature: 0°C to 55°C (32°F to 131°F)

Humidity Range: 0% to 95% R.H.

Termination: See Chart at Right

Wire Leads: 18AWG 6A to 20A (FD0)
(FD0 25Amp to 100Amp not available with wire leads)
10AWG 30Amp (FD1, FD2, FD3)
6AWG 50Amp
4AWG 75Amp & 100Amp

Agency Approvals:
6Amp to 20Amp
25/085/21
EN133200
25Amp to 100Amp
EN 60 950

Specifications subject to change.
Dimensions are shown for reference purposes only.

FD00 & FD02 SERIES

FILTER Part Number	Current Rating (Amps)	Termination		
		Quick Connects	Wire Leads	Studs
FD00AA006	6	X		
FD00BB006	6		X	
FD00DD006	6			X
FD00AA010	10	X		
FD00BB010	10		X	
FD00DD010	10			X
FD00AA020	20	X		
FD00DD020	20			X
FD00BD025	25		X	X
FD00DD025	25			X
FD00BD050	50		X	X
FD00DD050	50			X
FD00BD075	75		X	X
FD00DD075	75			X
FD00BD100	100		X	X
FD00DD100	100			X
FD02BD025	25		X	X
FD02DD025	25			X
FD02DD050	50			X
FD02BD050	50		X	X
FD02DD075	75			X
FD02BD075	75		X	X
FD02DD100	100			X
FD02BD100	100		X	X

FD1, FD2, FD3 SERIES

FILTER Part Number	Current Rating (Amps)	Disconnect Type			Termination			
		Single Pole Rocker Breaker	Double Pole Rocker Breaker	Double Pole Handle Breaker	Wire Leads	High Current Connector	Euro Connector	Dual Stud T-Block
FD10BB030	30				X			
FD10EE030	30						X	
FD10BB050	50				X			
FD10EE050	50						X	
FD10BB075	75				X			
FD10BB100	100				X			
FD20B_ _ _	30, 50, or 80				X			
FD20E_ _ _							X	
FD20R_ _ _		X						X
FD20D_ _ _			X					X
FD20H_ _ _				X				X
FD20 _B_ _ _					X			
FD20 _C_ _ _						X		
FD20 _E_ _ _							X	
FD20 _T_ _ _								X
FD30B_ _ _	30, 50, 75, or 100				X			
FD30E_ _ _							X	
FD30R_ _ _		X						X
FD30D_ _ _			X					X
FD30H_ _ _				X				X
FD30 _B_ _ _					X			
FD30 _C_ _ _						X		
FD30 _E_ _ _							X	
FD30 _T_ _ _								X

Dimensions are in inches and millimeters
unless otherwise specified.
Values in parentheses are metric equivalents.

How to Order

FD0 0 X Y 000

SERIES
- FD0
- FD1
- FD2
- FD3

OPTIONS:
- 0 = Standard
- 2 = High Frequency
- 3-9 = Specials

LINE TERMINATION:
- A = Quick Connect
- B = Wire Leads
- D = Dual Studs/Screw Terminal
- E = Euro Block Connector
- H = Dual Stud T-Block with DPST Handle Breaker
- R = Dual Stud T-Block with SPST Rocker Breaker

LOAD TERMINATION:
- A = Quick Connect
- B = Wire Leads
- C = High Current Connector
- D = Dual Studs/Screw Terminal
- E = Euro Block Connector
- T = Dual Stud T-Block

CURRENT RATING:
- 006 = 6Amps
- 010 = 10Amps
- 020 = 20Amps
- 025 = 25Amps
- 030 = 30Amps
- 050 = 50Amps
- 075 = 75Amps
- 080 = 80Amps
- 100 = 100 Amps

NOTE: Not all terminations are available in all models.

Part Number	MODE	TYPICAL INSERTION LOSS - dB (50 ohm Circuit) Frequency - MHz												
		.01	.03	.10	.15	.50	1.0	5.0	10	30	100	300	1000	3000
FD00XX006 FD00XX010 FD00XX020	Common **Differential**	– –	– –	– –	10 **15**	22 **45**	30 **60**	42 **60**	47 **50**	40 **50**	– –	– –	– –	– –
FD00XX025 FD00XX050 FD00XX075 FD00XX100	Common **Differential**	– –	– –	– –	22 **32**	50 **38**	60 **50**	50 **55**	45 **50**	40 **40**	– –	– –	– –	– –
FD02XX025 FD02XX050 FD02XX100	Common **Differential**	5 **40**	5 **45**	35 **45**	45 **45**	60 **48**	60 **50**	55 **45**	55 **55**	50 **48**	40 **45**	10 **15**	20 **58**	25 **40**
FD10XX030 FD10XX050 FD10XX075 FD10XX100	Common **Differential**	5 **55**	15 **60**	48 **70**	60 **70**	65 **70**	65 **65**	60 **70**	60 **60**	55 **50**	25 **35**	25 **15**	– –	– –
FD20XX030 FD20XX050 FD20XX080	Common **Differential**	5 **55**	15 **65**	48 **70**	60 **65**	70 **60**	70 **65**	70 **55**	60 **50**	55 **45**	– –	– –	– –	– –
FD30XX030 FD30XX050 FD30XX075 FD30XX100	Common **Differential**	12 **50**	20 **60**	44 **70**	60 **70**	60 **70**	60 **70**	60 **55**	60 **70**	55 **60**	– –	– –	– –	– –

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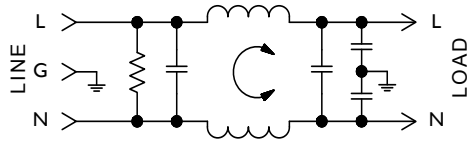
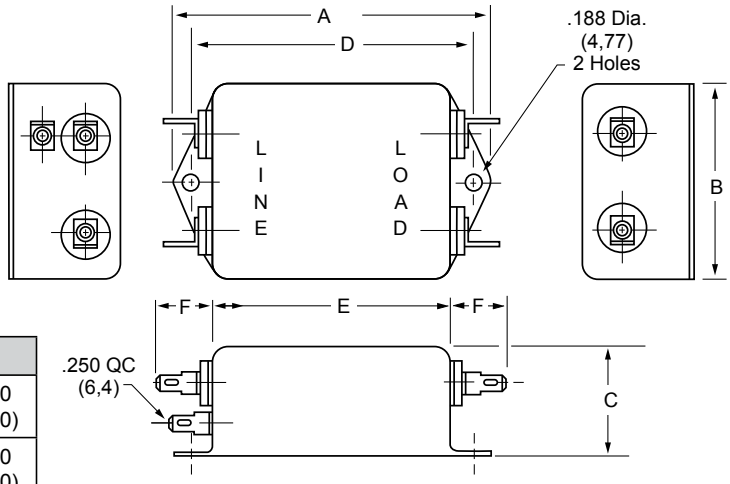
Specifications subject to change.
Dimensions are shown for reference purposes only.

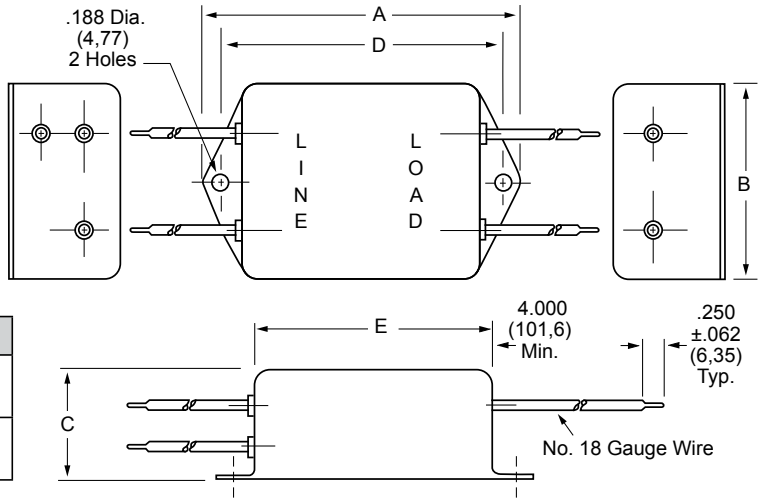
FD00AA (6, 10 and 20Amp) Dimensions





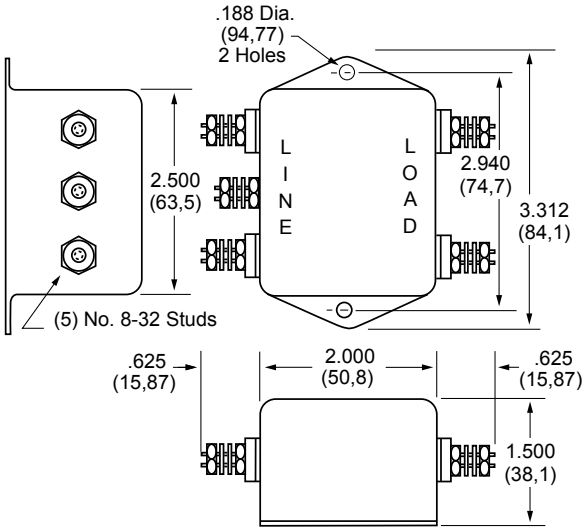
Amps	A	B	C	D	E	F
6A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
10A	3.312 (84,1)	2.000 (50,8)	1.500 (38,2)	2.940 (74,7)	2.500 (63,5)	.550 (14,0)
20A	See FD00DD below for Case Dimensions					

FD00BB
(6 and 10Amp) Dimensions



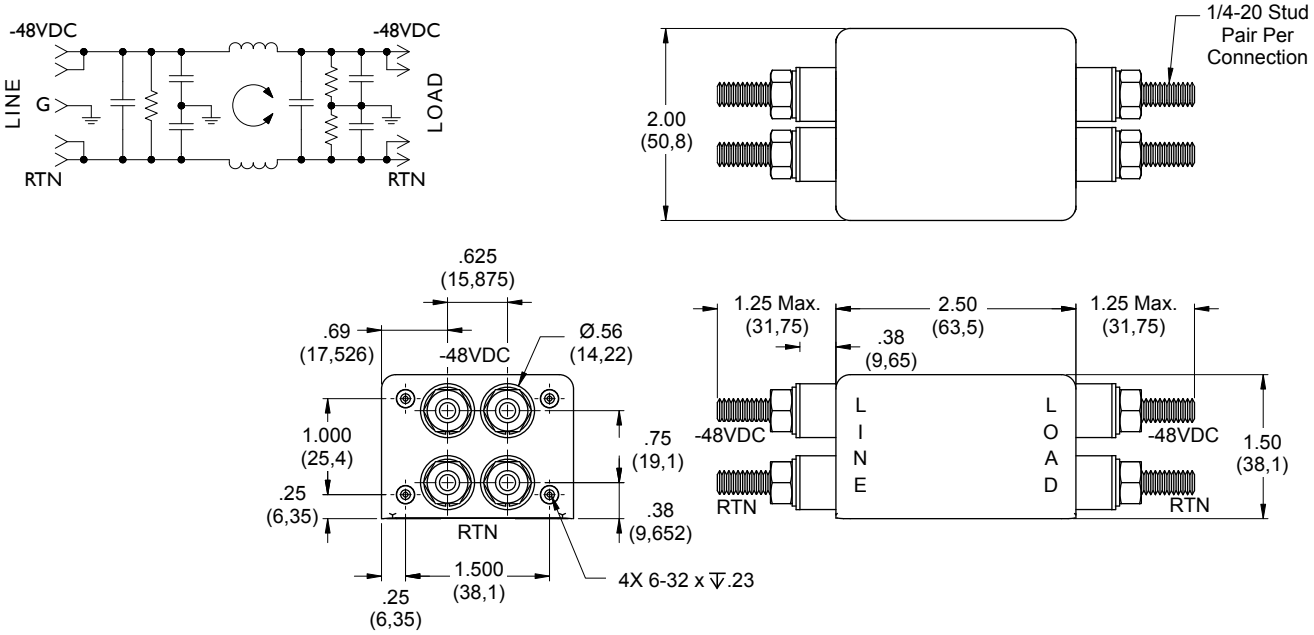
Amps	A	B	C	D	E
6A	3.312 (84,1)	2.000 (50,8)	1.125 (28,5)	2.940 (74,7)	2.500 (50,8)
10A	3.312 (84,1)	2.000 (50,8)	1.500 (38,1)	2.940 (74,70)	2.500 (50,8)

FD00DD (20Amp) Dimensions

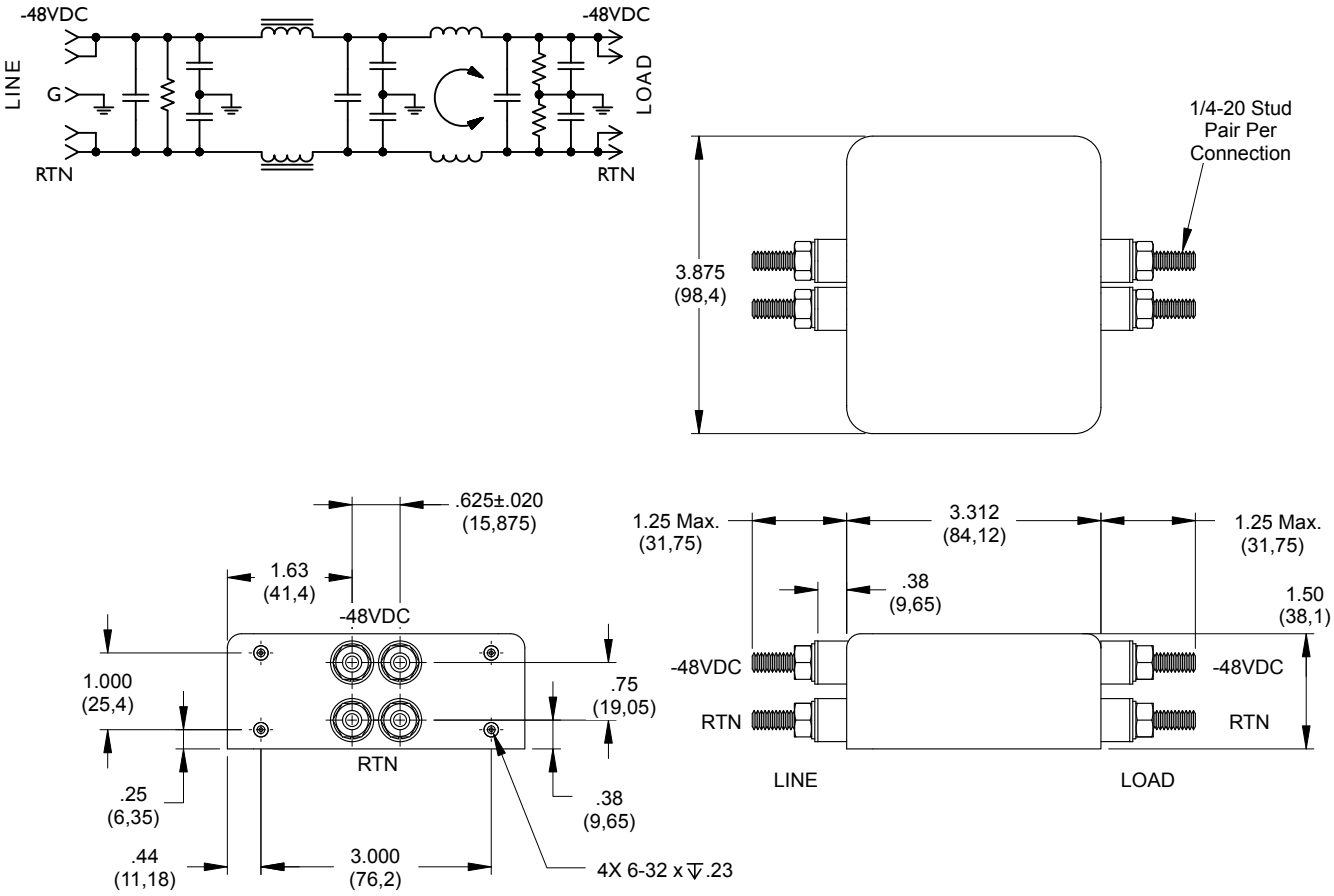


Dimensions are in inches and millimeters
unless otherwise specified.
Values in parentheses are metric equivalents.

FD00DD (25, 50, 75 and 100Amp) Dimensions



FD02DD (25, 50 and 100Amp) Dimensions



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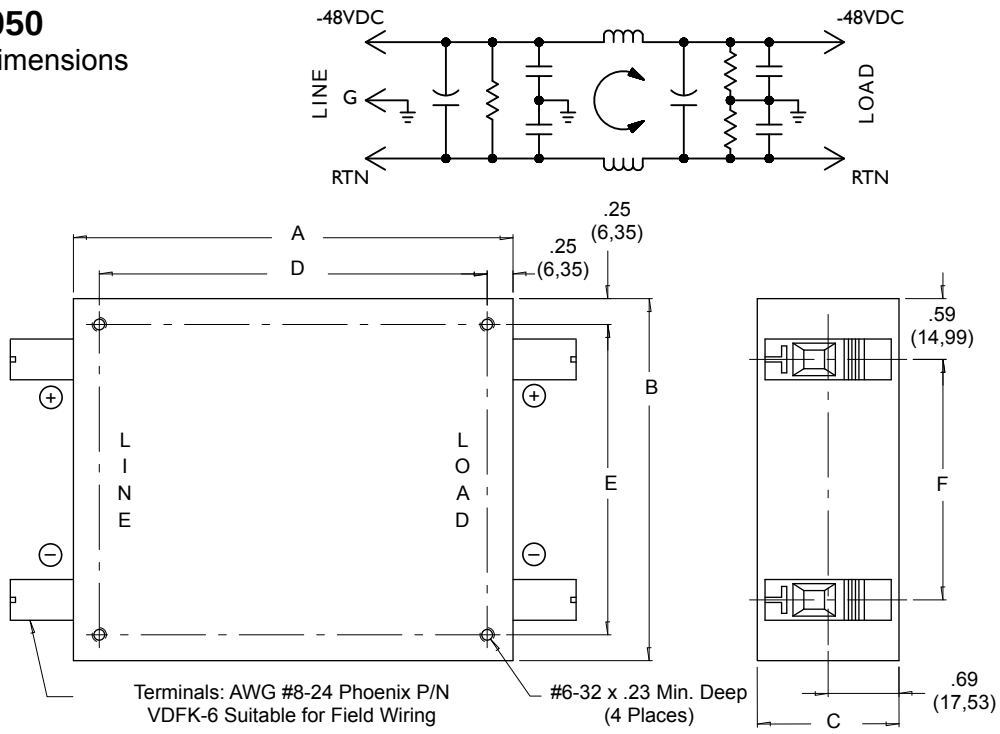
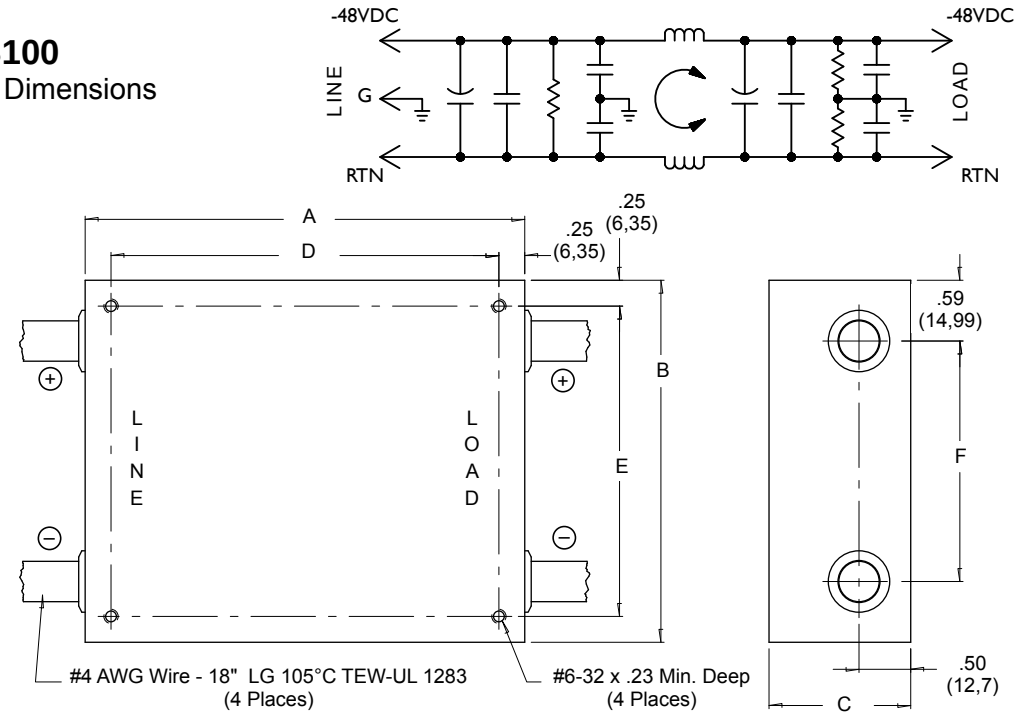
Dimensions are shown for
reference purposes only.

FD10EE050
(50Amp) Dimensions



Amps	A	B	C	D	E	F
50A	4.25 (107,95)	3.50 (88,9)	1.37 (34,79)	3.750 (95,25)	3.000 (76.2)	2.33 (59,18)
100A	4.25 (107,95)	3.50 (88,9)	1.37 (34,79)	3.750 (95,25)	3.000 (76.2)	2.33 (59,18)

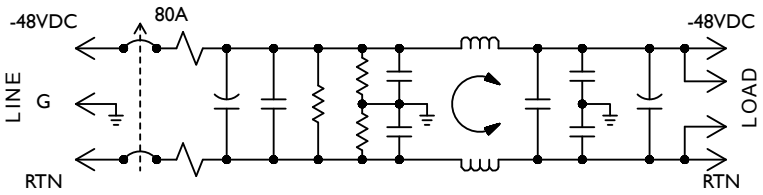
FD10BB100
(100Amp) Dimensions

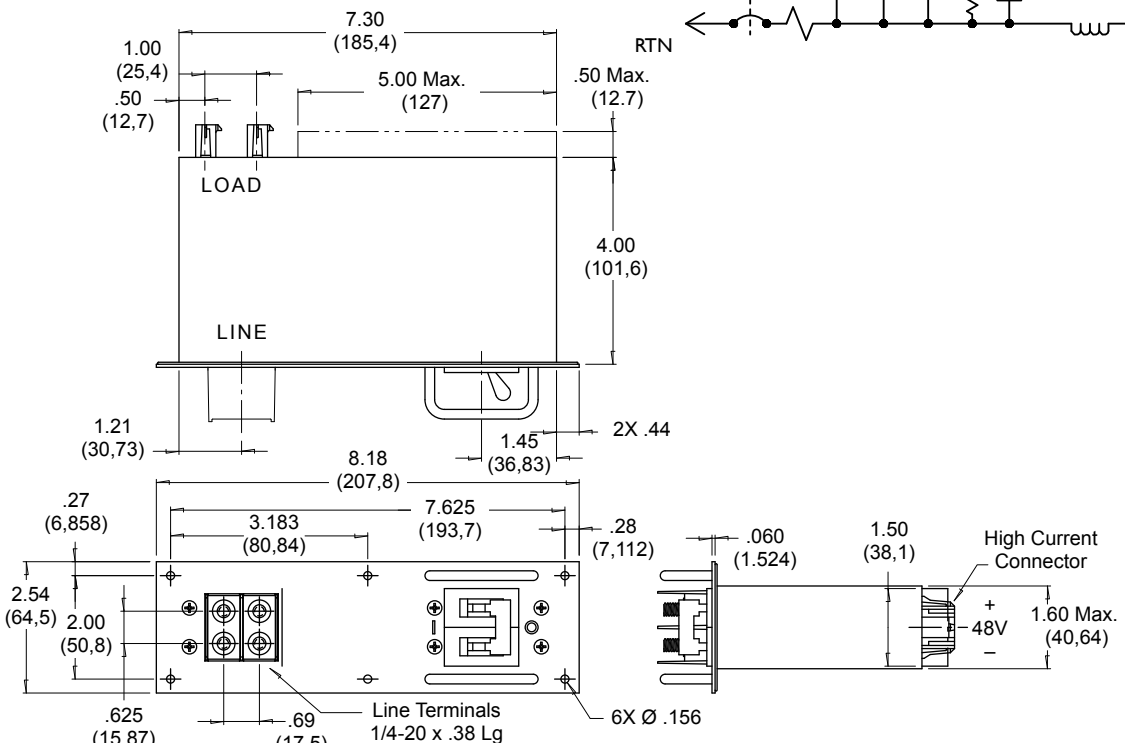


Dimensions are in inches and millimeters
unless otherwise specified.
Values in parentheses are metric equivalents.

FD20HC080

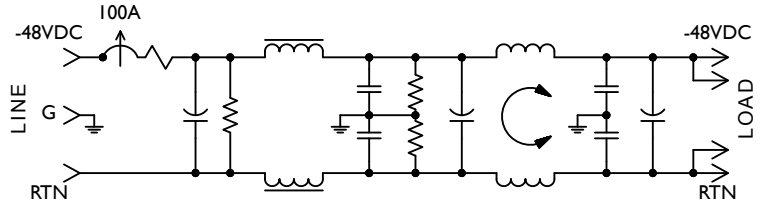
(30, 50 and 80Amp) Dimensions

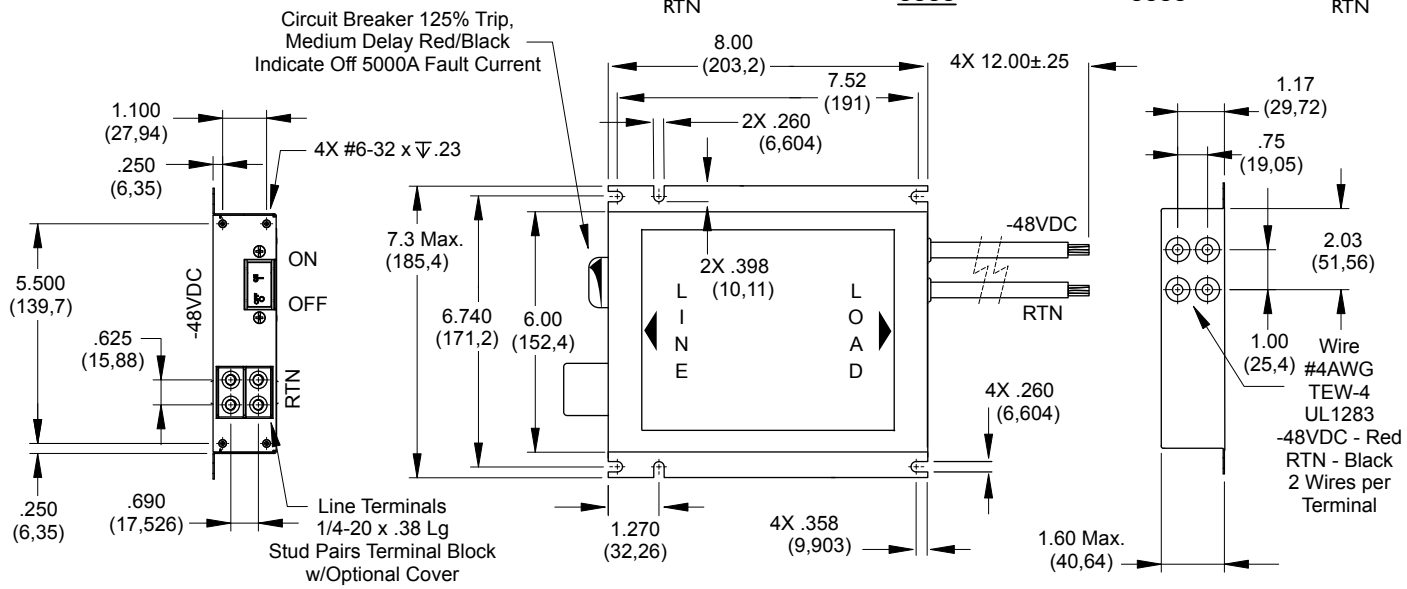




FD30RB100

(30, 50, 75 and 100Amp) Dimensions





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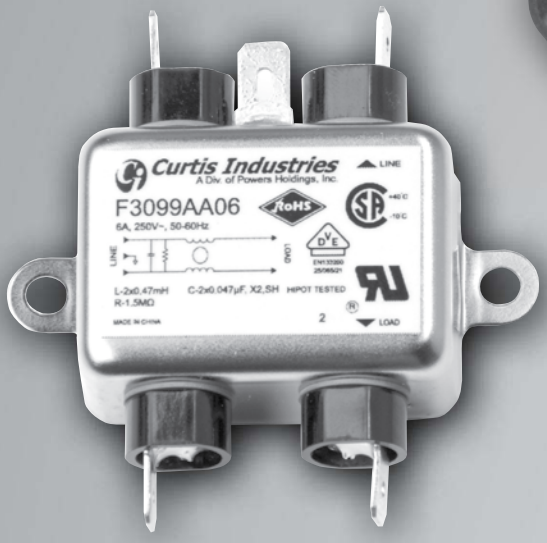
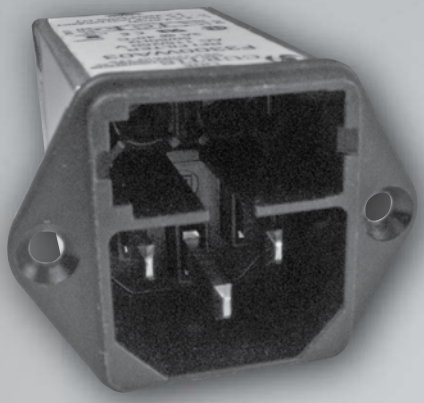
Dimensions are shown for
reference purposes only.

MEDICAL FILTERS

General Purpose Combination





Features:

- Designed to Meet UL544 and IEC601 Specifications for Medical and Dental Equipment, both patient care and onpatient categories.
- Leakage current in this series is extremely low to satisfy the stringest leakage current limit imposed by safety regulations for medical and dental equipment.

Specifications:

Maximum Voltage: 250VAC Maximum - 50/60 Hz
Rated Current: 250VAC
6A
Current Overload: 6X for 8 seconds
Hi-Pot Test (1 min):
Line to Ground 1500VAC
Line to Line 1450VDC
Insulation Resistance: 9 x 10^9 Ω at 100VDC
Ambient Temperature: 40°C Max at rated current
Humidity Range: 0% to 95% R.H.
Termination:
A: Quick Connect
B: Wire
Maximum Leakage Current:

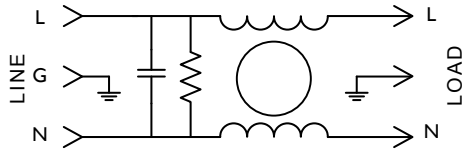
Each Line to Ground	**F3000 Series**
115VAC, 60Hz:	2 µA
250VAC, 50Hz:	5 µA

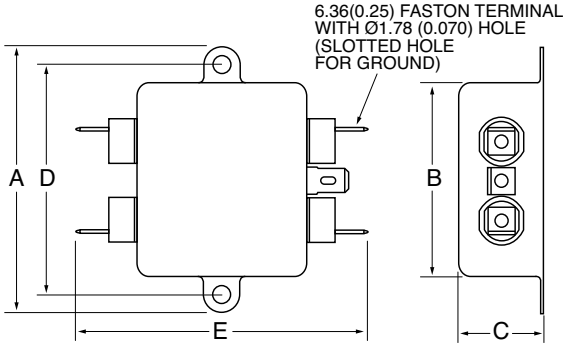
Agency Approvals:

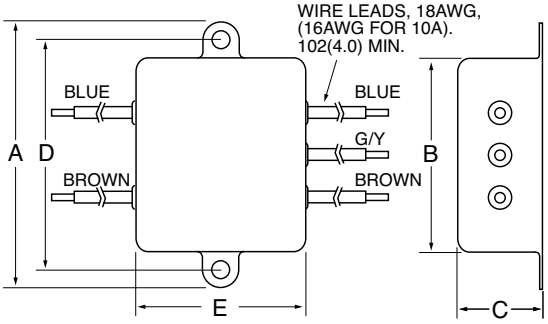
F3099AA (6Amp) Dimensions

Amps	A	B	C	D	E
6A	2.53 (64,30)	1.82 (46,2)	0.78 (19,8)	2.126 (54,0)	2.53 (64,30)
	2.53 (64,30)	1.82 (46,2)	0.78 (19,8)	2.126 (54,0)	1.32 (33,5)

F3099 Series Simplified Schematic







Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)							
			MODE	Frequency - MHz						
				0.05	0.10	.15	.50	1.0	5.0	10	30
6A	**F3099AA06** **F3099BB06**	QC/QC ø	Common **Differential**	3 **3**	7 **6**	11 **14**	20 **20**	22 **30**	24 **35**	22 **35**	18 **35**

NOTE: Other combinations of terminals may be specified on special order.

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Specifications subject to change.
Dimensions are shown for reference purposes only.

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	3A
6A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max at rated current

Humidity Range: 0% to 95% R.H.

Termination:

A: QC – Quick Connect

C: IEC Receptacle

Maximum Leakage Current:

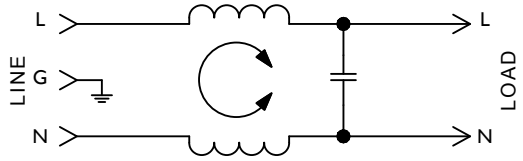
Each Line to Ground	**F3000 Series**
115VAC, 60Hz:	2 µA
250VAC, 50Hz:	5 µA

Agency Approvals:

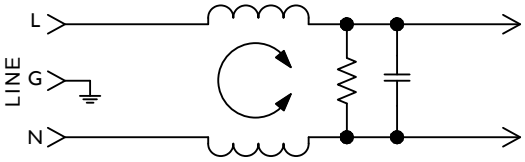
Features:

- Designed to Meet UL544 Specification for Medical and Dental Equipment. Available to UL/IEC 60601 Standard
- F3400/F3500 Have Enhanced Differential Mode Performance
- Effective in Other Low-Leakage Current Applications

F3000/F3100/F3200 Series
Simplified Schematic



F3400/F3500 Series
Simplified Schematic

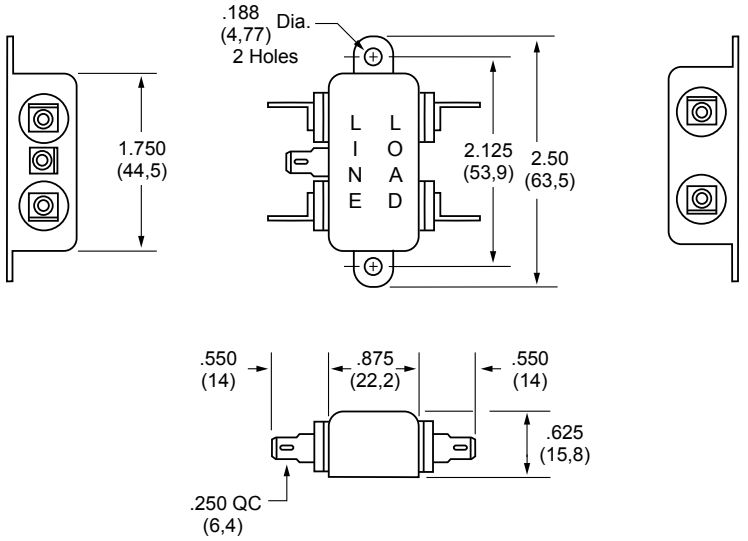


Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F3400CA03**	IEC/QC	Common	22	32	35	30	25	20
	F3500CA03	IEC/QC	**Differential**	**8**	**18**	**24**	**35**	**35**	**35**
6A	**F3000AA06**	QC/QC	Common	10	20	23	25	23	15
	F3100CA06	IEC/QC	**Differential**		**2**	**8**	**32**	**34**	**23**
	F3200CA06	IEC/QC							
	F3400CA06	IEC/QC	Common	15	21	24	24	22	26
	F3500CA06	IEC/QC	**Differential**	**8**	**18**	**24**	**35**	**35**	**35**

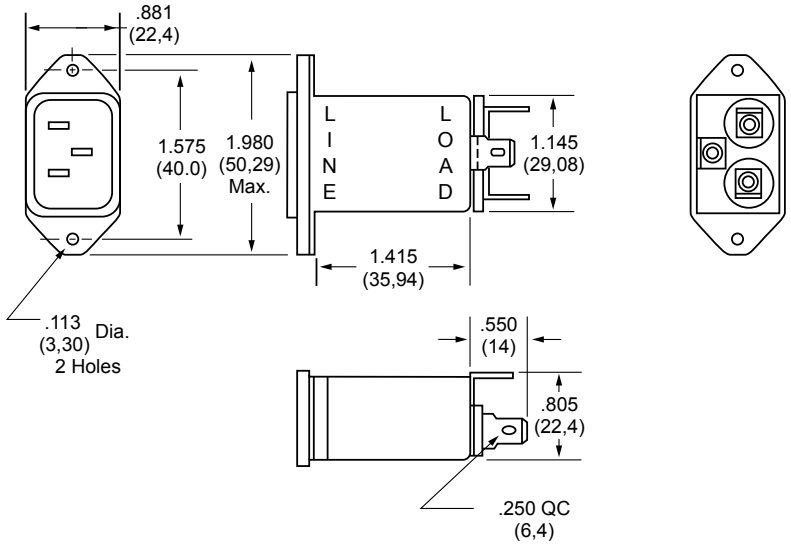
NOTE: Other combinations of terminals may be specified on special order.

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

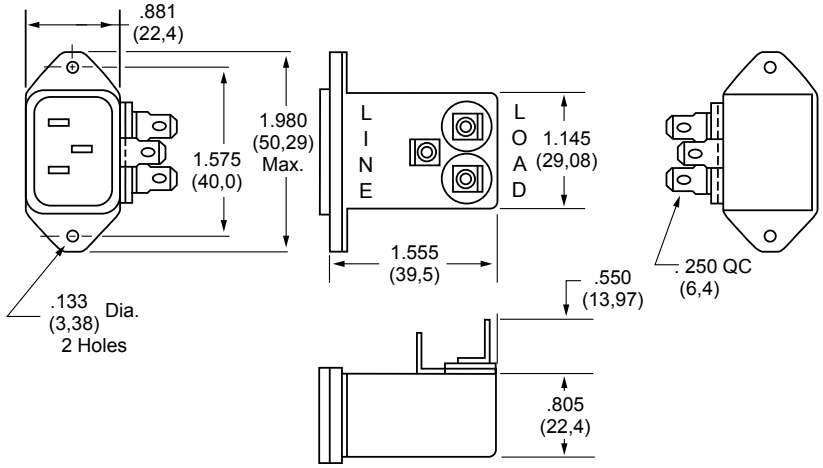
F3000AA
(6Amp)
Dimensions



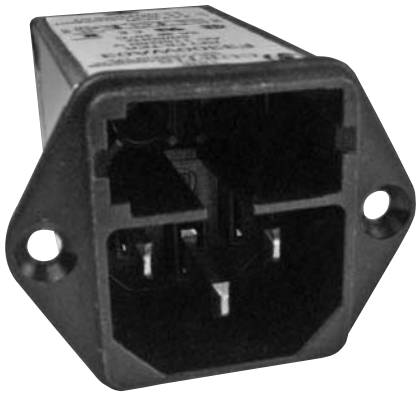
F3100CA
(6Amp)
F3400CA
(3 and 6Amp)
Dimensions



F3200CA
(6Amp)
F3500CA
(3 and 6Amp)
Dimensions



Specifications subject to change.
Dimensions are shown for
reference purposes only.



Features:

- General Purpose “L-Type” Circuit Effective in Reducing Both Incoming and Outgoing Powerline Noise Levels in FCC “A” Applications
- Integral 5 X 20mm Single or Dual Fused IEC Connector
- Optional SST Switched IEC Connector
- Low-Leakage
- Available to UL/IEC 60601 Standard and Meets UL 544 Specification for Medical and Dental Applications
- Available in Labor-Saving PC Mounted Case Style

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	3A
6A	6A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at Rated Current

Humidity Range: 0% to 95% R.H.

Termination:

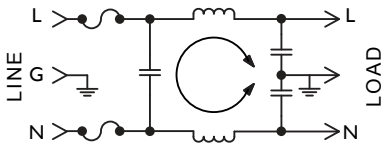
A: QC – Quick Connect
F: Fused IEC
J: Switched IEC
P: PC – P.C. Board
W: Dual Fused IEC

Maximum Leakage Current:

Each Line to Ground	**F3300**
115VAC, 60Hz:	.015mA
250VAC, 50Hz:	.025mA

Agency Approvals:

F3300F Simplified Schematic

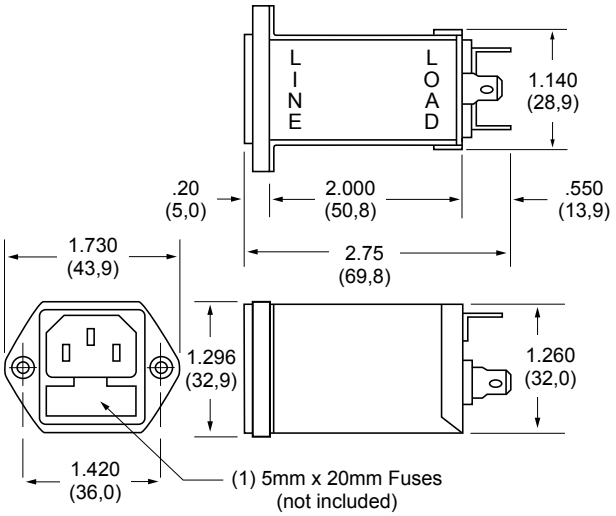


Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**F3300FA03** **F3300FP03**	Fused IEC/QC Fused IEC/PC	Common **Differential**	21 **8**	32 **18**	36 **24**	30 **35**	28 **35**	28 **35**
6A	**F3300FA06** **F3300FP06**	Fused IEC/QC Fused IEC/PC	Common **Differential**	18 **8**	30 **18**	34 **24**	26 **35**	25 **35**	25 **35**
3A	**F3300WA03** **F3300WP03**	Dual Fused IEC/QC Dual Fused IEC/PC	Common **Differential**	21 **8**	32 **18**	36 **24**	30 **35**	28 **35**	28 **35**
6A	**F3300WA06** **F3300WP06**	Dual Fused IEC/QC Dual Fused IEC/PC	Common **Differential**	18 **8**	30 **18**	34 **24**	26 **35**	25 **35**	25 **35**
3A	**F3300JA03** **F3300JP03**	Switched IEC/QC Switched IEC/PC	Common **Differential**	21 **8**	32 **18**	36 **24**	30 **35**	28 **35**	28 **35**
6A	**F3300JA06** **F3300JP06**	Switched IEC/QC Switched IEC/PC	Common **Differential**	18 **8**	30 **18**	34 **24**	26 **35**	25 **35**	25 **35**

NOTE: Other combinations of terminals may be specified on special order.

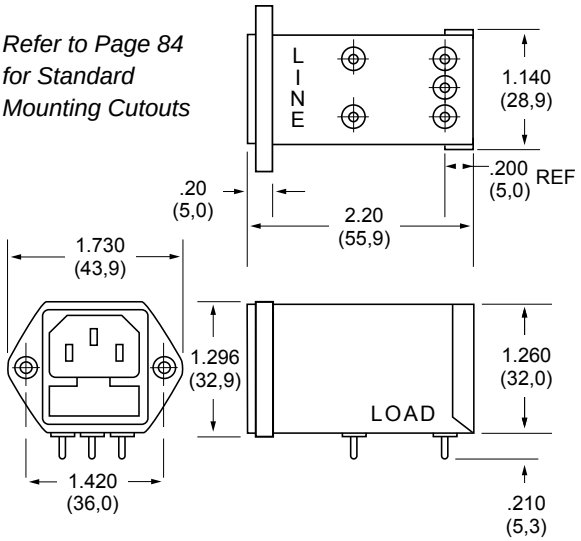
Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

F3300FA (3 and 6Amp) Dimensions



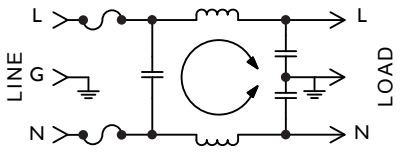
F3300FP (3 and 6Amp) Dimensions

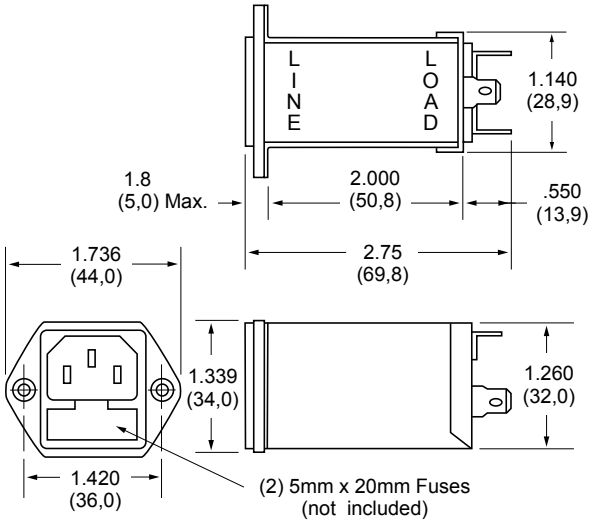
Refer to Page 84 for Standard Mounting Cutouts



F3300WA (3 and 6Amp) Dimensions

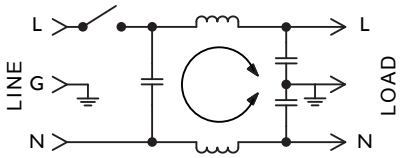
F3300W Simplified Schematic

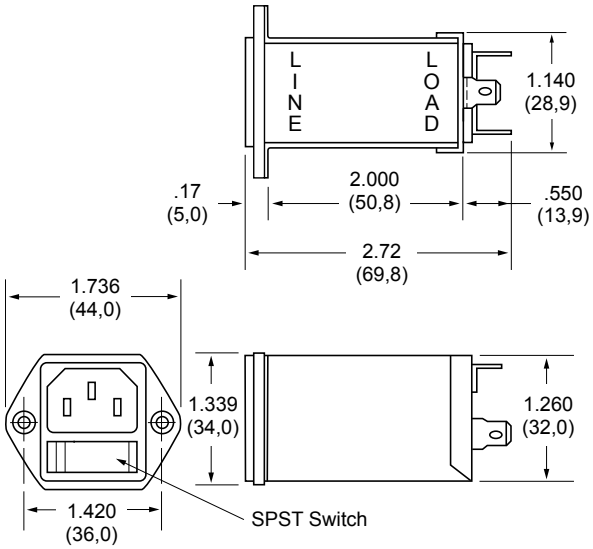




F3300JA (3 and 6Amp) Dimensions

F3300J Simplified Schematic





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Specifications subject to change.
Dimensions are shown for reference purposes only.

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
3A	3A
6A	6A

Current Overload: 6X for 8 Seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	1768VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max. at Rated Current

Humidity Range: 0% to 95% R.H.

Termination:

- IEC Receptacle
- Wire Wrap/Solder

Maximum Leakage Current:

Each Line to Ground	**PM7, PM 8**
115VAC, 60Hz:	0.002mA
250VAC, 50Hz:	0.005mA

Voltage Select Card: Installed in 120VAC position unless otherwise specified

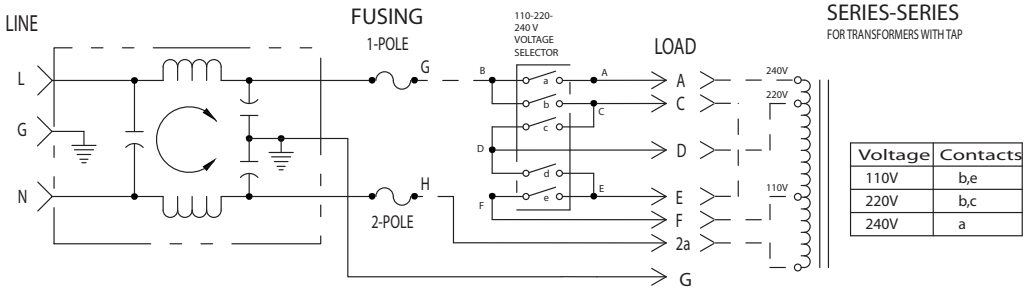
Agency Approvals:

Features:

- RFI Filter Module Combines IEC Connector, Fusing, and Voltage Select Features in One Unit
- PM7 Series Filters Provide 20% More Differential Mode Attenuation Than Comparable Units
- Accepts Either U.S. or European Standard Fuse Sizes
- Available to UL/IEC 60601 Standard and Meets UL 544 Specification for Medical and Dental Applications

Refer to Page 80 for Ordering Instructions

PM7 Series Simplified Schematic

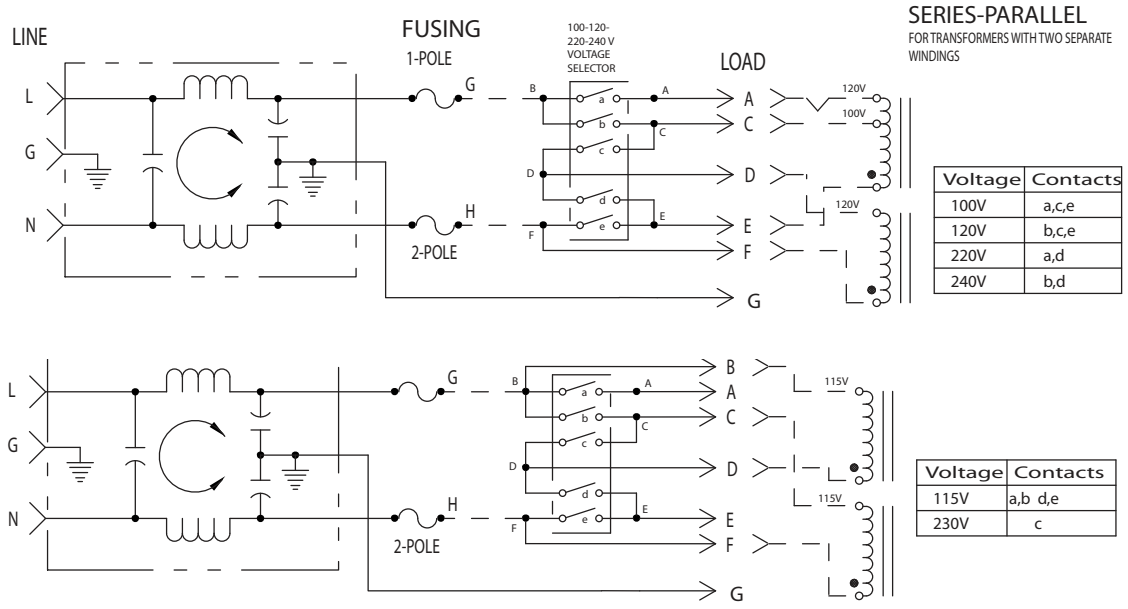


Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)						
			MODE	Frequency - MHz .15	.50	1.0	5.0	10	30
3A	**PM7XXX03** **PM8XXX03**	IEC/Solder Tabs	Common **Differential**	14 **8**	20 **18**	22 **24**	24 **46**	22 **50**	15 **40**
6A	**PM7XXX06** **PM8XXX06**	IEC/Solder Tabs	Common **Differential**	10 **8**	15 **18**	18 **24**	18 **39**	18 **40**	15 **40**

NOTE: Other combinations of terminals may be specified on special order.

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

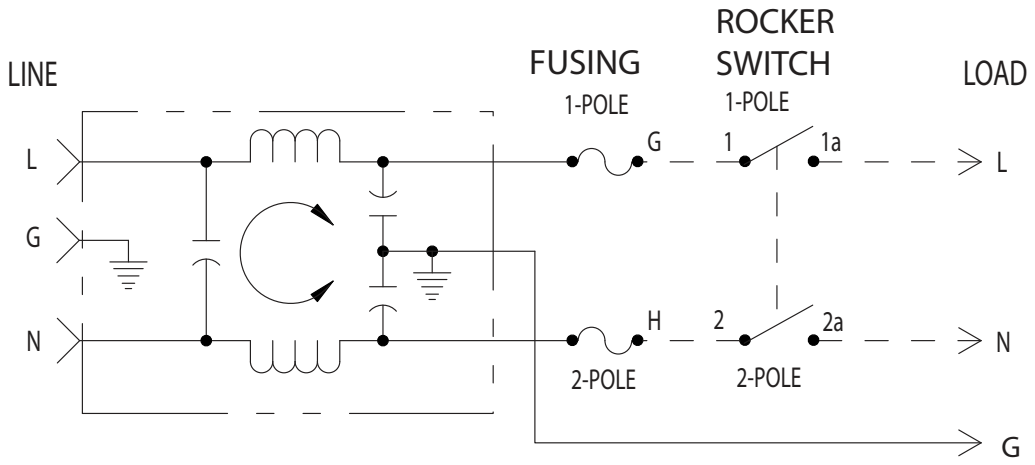
PM7 Series Simplified Schematic



Voltage	Contacts
100V	a,c,e
120V	b,c,e
220V	a,d
240V	b,d

Voltage	Contacts
115V	a,b d,e
230V	c

PM8 Series Simplified Schematic



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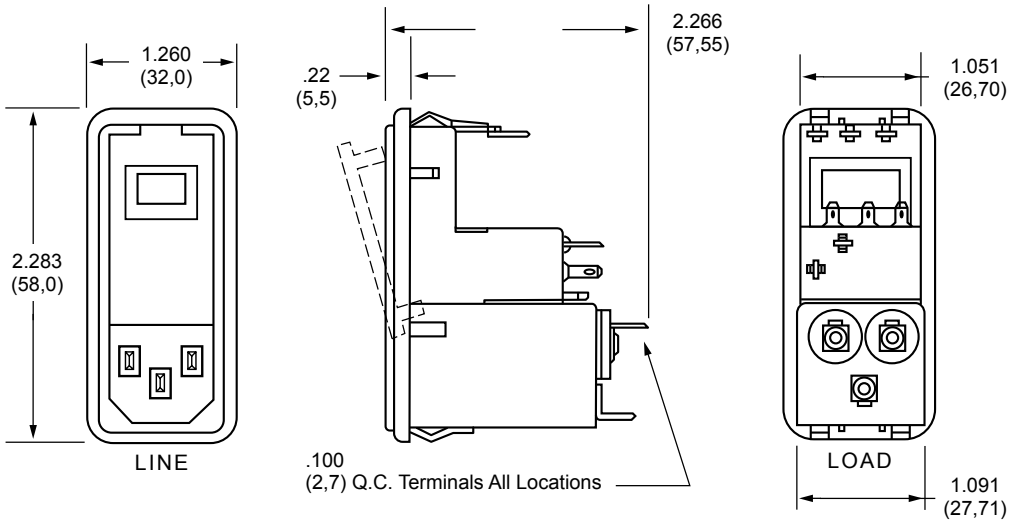
Dimensions are shown for
reference purposes only.

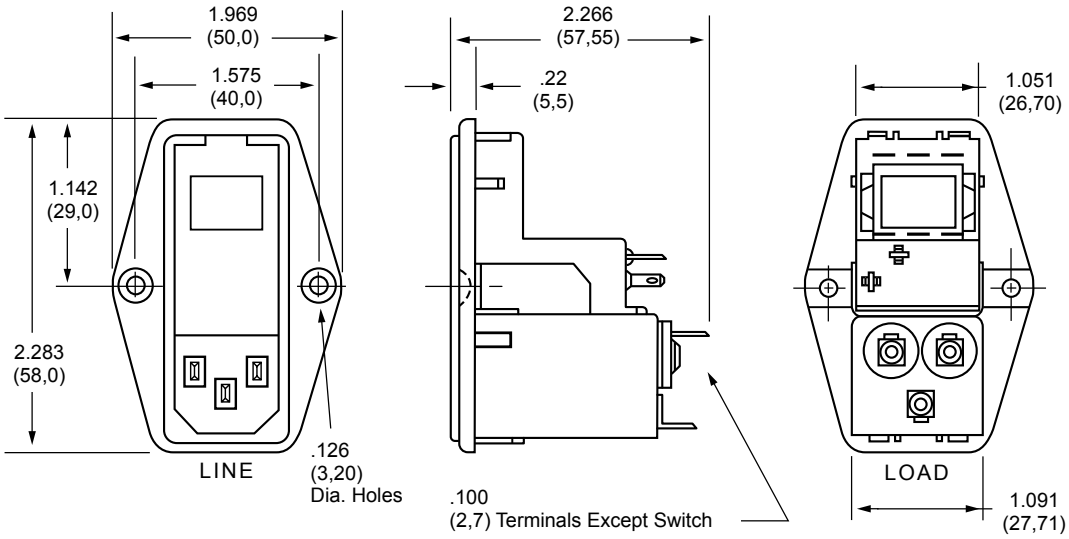
PM7/PM8
Snap-Mount Series
(3 and 6Amp) Dimensions

Refer to Page 80 for Standard Mounting Cutouts



PM7/PM8
Screw-Mount Series
(3 and 6Amp) Dimensions

Refer to Page 80 for Standard Mounting Cutouts



Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

How to Order

PM7
PM8 **X** **X** **X** **X** **X**

SERIES
PM = Medical Power Entry

MOUNTING METHOD & FUSING
0 = Snap Mount Metric Fuse
1 = Snap Mount U.S. Fuse
2 = Snap Mount 2 Metric Fuse
3 = Snap Mount 2 U.S. Fuses
6 = Screw Mount Metric Fuse
7 = Screw Mount U.S. Fuse
8 = Screw Mount 2 Metric Fuses
9 = Screw Mount 2 U.S. Fuses

VOLTAGE SELECTOR
0 = No Selector (PE80 Series)
1 = 110-220-240 VAC
2 = 100-120-220-240 VAC
3 = 115-230 VAC

SWITCH
0 = No Switch
1 = SPST Rocker Switch w/Q.C.
2 = DPST Rocker Switch w/Q.C.

OPTIONS
(Consult Factory)
0 = Standard Units

CURRENT RATING
3 = 3 AMP
6 = 6 AMP

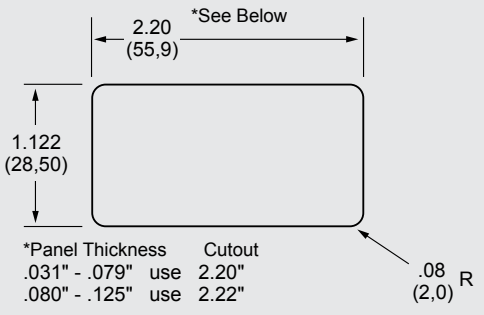
INSTALLATION INSTRUCTION IMPORTANT – CHANGING FUSE/VOLTAGE

PM7/PM8
To change fuse, remove power cord and open the front cover on the module. Remove fuse holder and replace fuse. Reinsert fuse holder and close cover. To change the operating voltage on the PM7 Series, remove the power cord and open front cover. Rotate voltage select wheel until desired voltage appears in window of cover.

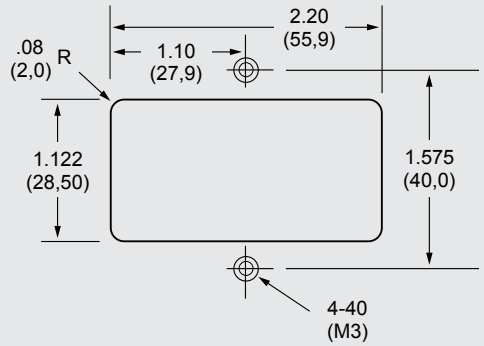
- Filter shipped without fuse.

Always use caution when selecting and changing fuses and voltage requirements. Curtis Industries is not responsible for malfunction due to improper installation/selection of fuse and/or voltage select.

PM7/PM8 Snap-Mount Series



PM7/PM8 Screw Mount Series



Specifications subject to change.
Dimensions are shown for reference purposes only.

Specifications:

Rated Voltage: 250VAC Maximum - 50/60 Hz

Rated Current:

115VAC	250VAC
10A	10A

Current Overload: 6X for 8 seconds

Hi-Pot Test (1 min):

Line to Ground	1500VAC
Line to Line	2250VDC

Insulation Resistance: 9 x 10^9 Ω at 100VDC

Ambient Temperature: 40°C Max at rated current

Humidity Range: 0% to 95% R.H.

Termination:

- QC – Quick Connect
- IEC Receptacle

Maximum Leakage Current:

Each Line to Ground	PM1	PM1-PO
115VAC, 60Hz:	0.002mA	0.015mA
250VAC, 50Hz:	0.005mA	0.025mA

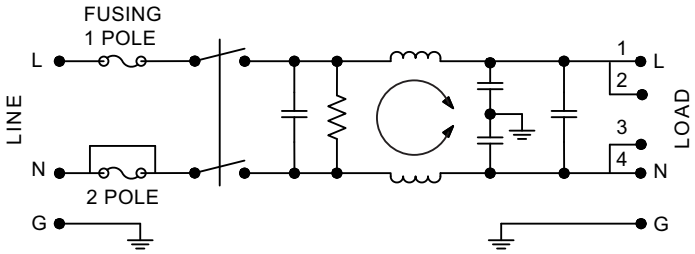
Voltage Select Card: Installed in 120VAC position unless otherwise specified

Agency Approvals:

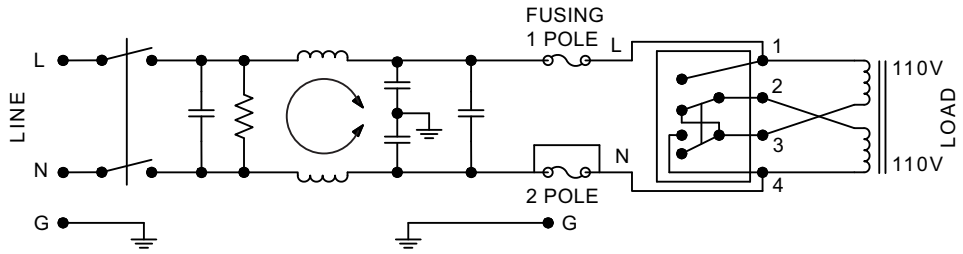
Features:

- RFI Filter Module Combines IEC Connector, Fusing, Optional Voltage Select and On/Off Switch into a Single, Space-Efficient Assembly
- Enhanced Low Frequency Response with No Resonant Peaks
- Fully Shielded for Radiative Noise Control
- Accepts Either U.S. or European Standard Fuse Sizes. Dual or Single Power Line Fusing
- Meets IEC 60601 Standard and Meets UL 544 Specification for Medical and Dental Applications

PM1 Series Simplified Schematic without Voltage Selector



PM1 Series Simplified Schematic with Voltage Selector

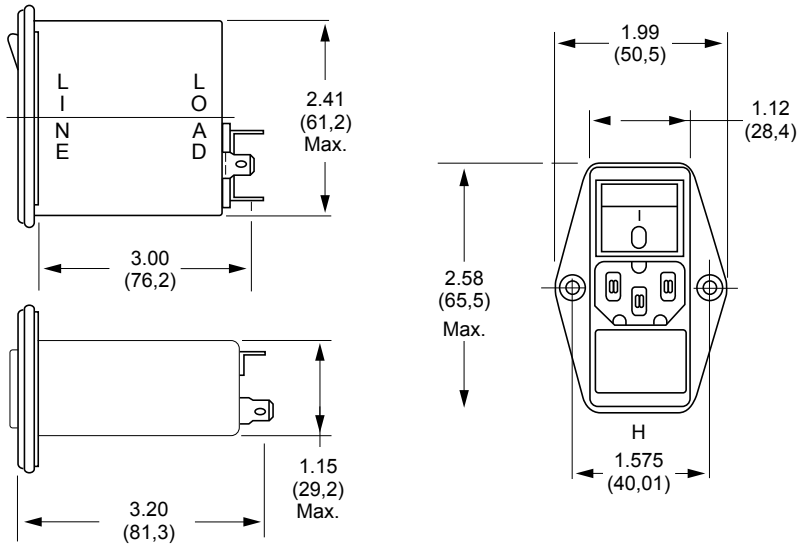


Nominal Current Rating	Part Number	Termination Line/Load	MINIMUM INSERTION LOSS - dB (50 ohm Circuit)							
			MODE	Frequency - MHz						
				.05	.15	.50	.10	5.0	10	30
10A	**PM1XXX10**	IEC/QC	Common **Differential**	10 **10**	20 **20**	30 **30**	33 **35**	25 **55**	20 **60**	15 **55**
	PM1XXXP0	IEC/QC	Common **Differential**	123 **10**	234 **20**	30 **30**	35 **35**	25 **65**	25 **65**	30 **55**

NOTE: Other combinations of terminals may be specified on special order.

Dimensions are in inches and millimeters unless otherwise specified.
Values in parentheses are metric equivalents.

PM1
(10Amp)
Dimensions



How to Order

PM1 X X X X 0

SERIES
PM = Medical Power Entry

MOUNTING METHOD & FUSING
6 = Screw Mount Metric or U.S. Fuse*
8 = Screw Mount 2 Metric or U.S. Fuses
*U.S. Fuse not available without voltage selector

VOLTAGE SELECTOR
0 = No Selector
3 = 115-230 VAC

OPTIONS
(Consult Factory)
1 = Standard Units
P = High Performance Insertion Loss

SWITCH
0 = No Switch
1 = SPST Rocker Switch
2 = DPST Rocker Switch

CURRENT RATING
0 = 10 AMP

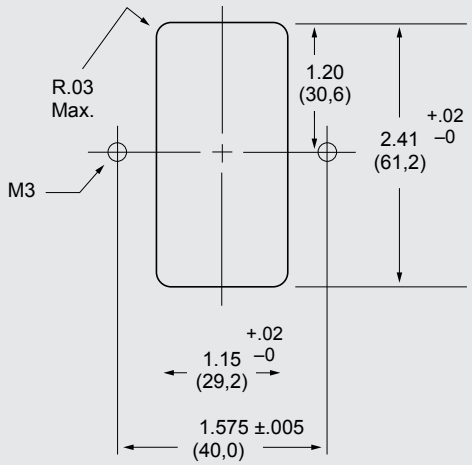
INSTALLATION INSTRUCTION IMPORTANT – CHANGING FUSE/VOLTAGE

PM1
To change fuse, remove power cord. Remove voltage selector and replace fuse. Reinsert fuse holder. To change the operating voltage on the PM1 Series, remove the power cord and rotate fuse holder block until desired voltage aligns with the mark on the module housing.

- Filter shipped without fuse.

Always use caution when selecting and changing fuses and voltage requirements. Curtis Industries is not responsible for malfunction due to improper installation/selection of fuse and/or voltage select.

PM1 Screw Mount Series



Curtis Industries
A Division of Powers Holdings, Inc.

Specifications subject to change.
Dimensions are shown for reference purposes only.

TECHNICAL CONSIDERATIONS

Understanding Terminology

Technical Considerations

Conducted Emissions Testing

Custom Filter Capabilities

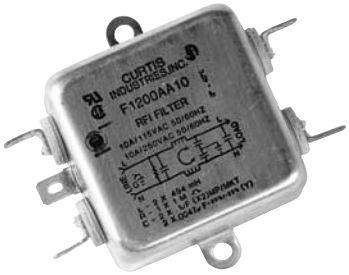
Understanding Terminology

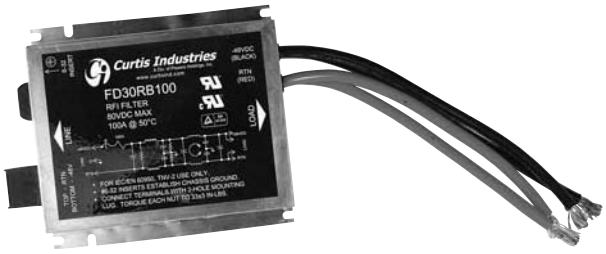
Curtis Industries, a leading manufacturer of superior-quality electronic and electrical components and assemblies for more than 70 years, offers a complete line of RFI power line filters designed to help your equipment meet FCC and CE requirements on conducted EMI.

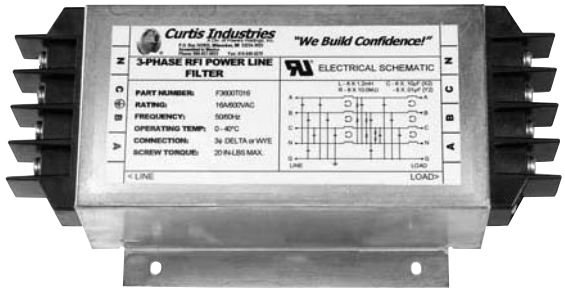
Radio frequency interference (RFI) is unwanted noise generated by a wide variety of electronic and electrical devices. Governments of most industrial countries, including the United States, Canada and the European Union have enacted guidelines on emitted RFI.

Curtis designs quality into every product and then tests for quality by specification compliance, including hipot, component value, grounding and leakage, on a 100% production basis. We employ a rigorous component qualification program with thorough incoming and on-line inspection procedures. Our computer-controlled 100% safety and performance testing to demanding customer requirements is your assurance of the highest quality RFI filters available today.

This section provides you with some basic knowledge on terminology and technical information helpful in solving your noise emission in power circuits. For additional information visit our website at www.curtisind.com.







Definitions

Attenuation: The decrease in intensity or absorption of electromagnetic energy. Expressed in dB.

Conducted Interference: Electromagnetic signals entering a device through direct connection.

Emissions: The level of electromagnetic disturbances equipment causes to its environment.

Filter: Remove electrical noise or interference from the power line by cleaning up the sine wave.

Immunity: The level to which equipment is immune to electromagnetic disturbances in its environment

Impedance: Opposition to the flow of electrical current when a given voltage is applied.

Inductor: Passive component that produces a voltage proportional to the change in current. Measured in Henrys.

Insertion Loss: The electromagnetic signal loss resulting from the insertion of a filter in a transmission line. Expressed in dB.

What is RFI?

Radio frequency interference (RFI) is the radiation or conduction of radio frequency energy (or electronic noise) produced by electrical and electronic devices at levels that interfere with the operation of adjacent equipment. Frequency ranges of most concern are 10 kHz to 30 MHz (conducted) and 30 MHz to 1 GHz (radiated).

What causes RFI?

The most common sources include components such as switching power supplies, relays, motors and triacs. These devices are found in a wide variety of equipment used in industrial, medical, white goods, and building HVAC equipment.

What are the types of RFI?

An electrical or electronic device emits RFI in two ways:

- **Radiated RFI** is emitted directly into the environment from the equipment itself.
- **Conducted RFI** is released from components and equipment through the power line cord into the AC power line network. This conducted RFI can affect the performance of other devices on the same network.

How can RFI be controlled?

- **Radiated RFI** is usually controlled by providing proper shielding in the enclosure of the equipment.
- **Conducted RFI** can be attenuated to satisfactory levels by including a power line filter in the system.

The filter suppresses conducted noise leaving the unit, reducing RFI to acceptable levels. It also helps to lower the susceptibility of the equipment to incoming power line noise that can affect its performance.

What is the government's role in regulating RFI?

Governments and safety agencies of major industrial countries, including the United States, Canada, and the European Union have established noise emission regulations that are focused on digital and other electronic equipment. The most important of these guidelines are FCC CFR 47 (Parts 15 and 18) in the United States and CISPR 11, 14 and 22 in the European Union.

FCC CFR 47 (Part 15) regulates the RF interference of electronic computing devices, defined as any electronic device or system that generates and uses timing signals or pulses at a rate in excess of 10,000 pulses (cycles) per second and uses digital techniques. This definition includes telephone equipment that utilizes digital techniques and any device or system that generates and uses radio frequency energy for the purpose of performing data-processing functions such as electronic computations, operations, transformations, recording, filing, sorting, storage, retrieval or transfer.

FCC regulations are broken down into **Class A** computing devices marketed for use in commercial, industrial or business environments, and **Class B** devices intended for use in a residential environment.

The European Union has harmonized the various national regulations and has established the international standards CISPR 11, 14 and 22. CISPR 11 covers industrial, scientific and medical equipment. CISPR 14 covers electrical and thermal appliances and tools. CISPR 22 covers information technology equipment.

In addition to governmental regulations, safety agencies worldwide have established guidelines for all electrical/electronic components. These include UL, CSA and TUV. They are designed to protect against shock and fire hazard.

How do RFI power line filters work?

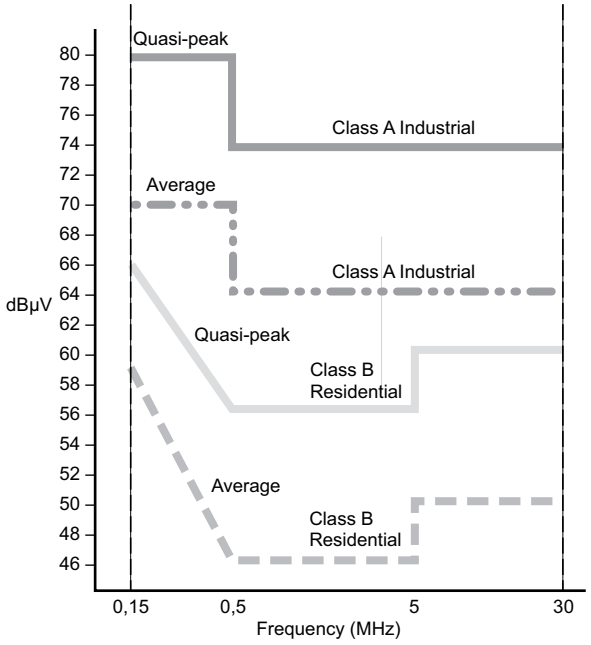
Consisting of a multiple-port network of passive components arranged as a dual low-pass filter, the RFI filter attenuates radio frequency energy to acceptable levels, while permitting the power frequency current to pass through with little or no attenuation. Their function, essentially, is to trap noise and to prevent it from entering or leaving your equipment.

RFI is conducted through a power line in two modes. Asymmetric or **common mode** noise occurs between the line and ground. Symmetric or **differential mode** is measured from line to line. See the selection guide on page 2 under "Performance."

Meeting Emissions Standards

The emissions limits that a piece of equipment must meet will depend on the intended market for that piece of equipment. If there is more than one market, more than one emission standard may have to be met. This can have a substantial effect on the circuit, size, and cost of a filter. Standards like the CISPR's or the FCC Rules Part 15 have frequency limits of 150 kHz to 30 MHz.

FCC 15 AND CISPR CONDUCTED EMISSION LIMITS DIGITAL EQUIPMENT



EMI measurements are generally made using Spectrum Analyzers with Average or Quasi-Peak detectors in accordance with methods described in CISPR 16. Quasi-Peak differs from Average measurements by weight-averaging the peaks into the total.

Equipment meeting these specifications can utilize a filter with a fairly high cutoff frequency. Other standards like FCC 18 with a low frequency limit of 10 kHz will result in the equipment using lower cutoff filters. As might be expected, the lower the cutoff frequency, the larger the physical size and the higher the cost of the filter.

Conducted RFI Susceptibility

The problem of susceptibility can be extremely difficult to deal with because the amplitude and frequency of the offending RF noise are seldom known and are often intermittent. If the malfunction can be duplicated by isolating the equipment from the power line with LISN's (Line Impedance Stabilization Network) and using signal generators to inject RF of varying amplitude and frequency, some insight can be gained as to the nature of the problem. However, the criteria for acceptable performance will have to be decided upon so that a filter yielding this level of performance can be obtained from the test procedure. Unfortunately, this still does not eliminate the need for final testing in the actual operating environment which, in many cases, occurs in the field.

Selection of a suitable filter can best be based on the type of power supply or input impedance of the equipment and on the mode of the offending RFI noise.

Noise Modes

Power line filters attenuate noise in two different modes.

Common Mode: Also known as line-to-ground noise measured between the power line and ground potential.

Differential Mode: Also known as line-to-line noise measured between the lines of power.

Power line filters are designed to attenuate either one or both modes of noise. The need for one design over another will depend on the magnitude of each noise type present. The attenuation is measured in dB (decibels) at various frequencies of signal.

Circuit Configuration

Power line RFI filters are generally built with two or three-pole filter networks. As the number of poles and the corresponding component count increases, the cost will increase also. Trying to typify an equipment's impedance as either high or low for purposes of filter selection may not be successful. If it is a complex impedance, it could probably be low at some frequencies, high at others, and some intermediate value at still other frequencies.

Although we have been generally successful in recommending a two-pole network for linear power supplies and three-pole networks for switching power supplies and synchronous motors, you should not limit your testing to just one circuit type if either additional circuit performance or lower cost is desired. Consider the following: If the equipment looked strictly capacitive, the performance of a two-pole network would be reduced to that of a single-pole filter.

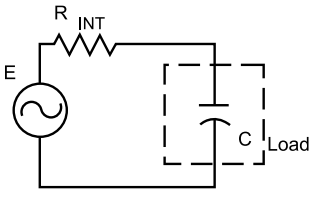


Figure 1a.
A signal source (E) with its internal impedance driving a capacitive load.

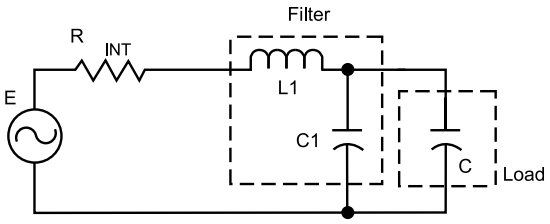
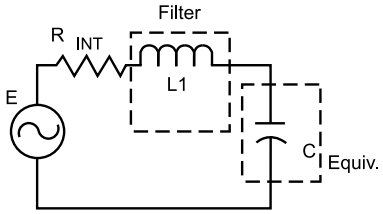


Figure 1b.

The same circuit as in Figure 1a, with the addition of a 2-pole low pass filter. Notice filter capacitor C1 is in parallel with the capacitive load.

Figure 1c.

Combining capacitor C1 in Figure 1b, with the load results in this circuit configuration.

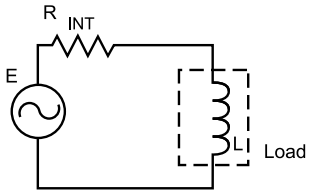


The filter has been reduced to one inductive element, L1.

Obviously a three-pole filter would be preferred for maximum performance. Likewise, if the equipment looked strictly inductive, the performance of a three-pole network would be reduced to that of a two-pole network.

Figure 2a.

A signal source with its internal impedance driving an inductive load.



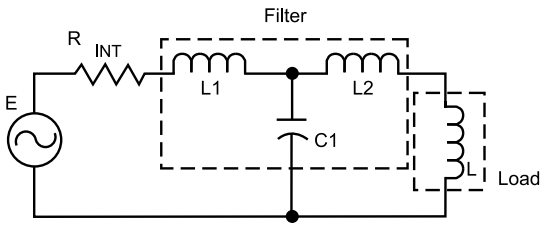


Figure 2b.

The same circuit as in Figure 2a, with the addition of a 3-pole low pass filter. Notice filter inductance L2 is in series with the inductive load.

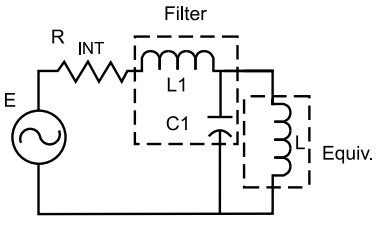


Figure 2c.

Combining inductor L2 in Figure 2b, with the load results in this circuit configuration, the filter has been reduced to two effective elements, L1 & C1.

Undoubtedly the two-pole filter would be a more economical choice with probably equal performance in this application. Since the equipment is not likely to be equivalent to either one of these simple cases, the only way to find the best cost-effective solution is to test the filters in your equipment and base your judgement on these test results.

Leakage Current

The maximum leakage current that a device is allowed depends on the requirements of the particular safety agency involved. Here, selection of the filter is quite easy since either the filter is designed to meet a given level or it is not. Although there is no compromise when it comes to safety specifications, it should be understood that for a given level of performance, as the leakage current is reduced, the physical size of the package will increase. Curtis medical filters have a very low leakage current.

Insertion Loss

DO NOT use the insertion loss specifications to make your final decision. Power line filters are two-terminal pair passive networks whose attenuation characteristics can be defined by a complex transfer function. How that transfer function will react in a particular system and at specific frequencies will depend on the complex impedances connected to each side of the filter. The equipment impedance and the impedance of the power line, even if a 50 ohm LISN (Line Impedance Stabilization Network) is being used during emission testing, will not generally be equal to the resistive 50 ohms used during insertion loss measurements. Therefore, the performance of the filter in the equipment cannot be related to the published insertion loss data.

Minimum Insertion Loss

Do not be alarmed that the insertion loss figures we have published may be of lower value than those of our competition. You will only find guaranteed minimum insertion loss figures in this catalog, without any mention of typical values.

Insertion loss test data measured in a 50 ohm system is a valuable incoming inspection tool to assure you that consistent product is being shipped. The only figures of any importance are those that specify the criteria for acceptance or rejection of that product, and those figures are the minimum values.

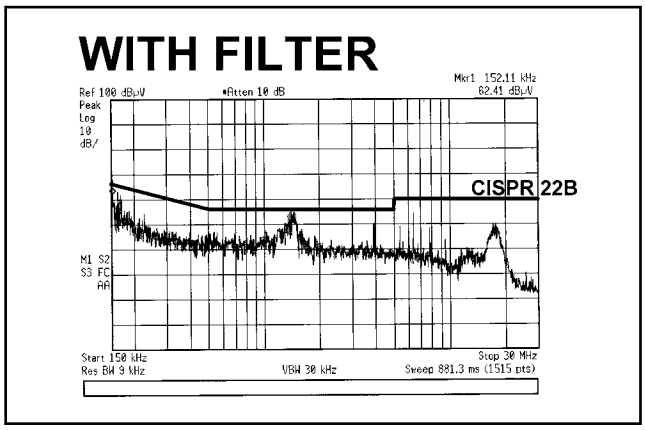
RFI/EMI Conducted Emissions Testing

Curtis offers full RFI/EMI conducted emissions testing services for manufacturers who must produce equipment in accordance with FCC and CE standards.

Curtis testing facilities consist of a laboratory equipped to test and evaluate EMI characteristics of equipment that must comply with FCC Part 15 and/or CISPR standards. With these facilities, Curtis can provide manufacturers with greater assistance in the selection of RFI/EMI filters to help them meet the necessary emission levels.

Isolated Environment Enhances Test Capabilities

- Totally isolated environment for both equipment under test and test instrumentation provided by separate chambers.
- RF screen room shielded against magnetic, electric and plane wave field per MIL-STD-285.
- Specially constructed line impedance stabilization networks (LISN) for FC Part 15 and CISPR testing.
- Sensitive, reliable automatic measurement and recording of conducted emissions data from 10 KHz to 1 GHz.
- Computer-controlled Agilent E7402A Spectrum Analyzer with associated amplifiers and attenuators.
- Agilent E7402A graphics capabilities allow quick generation of hard copies of emissions test results.

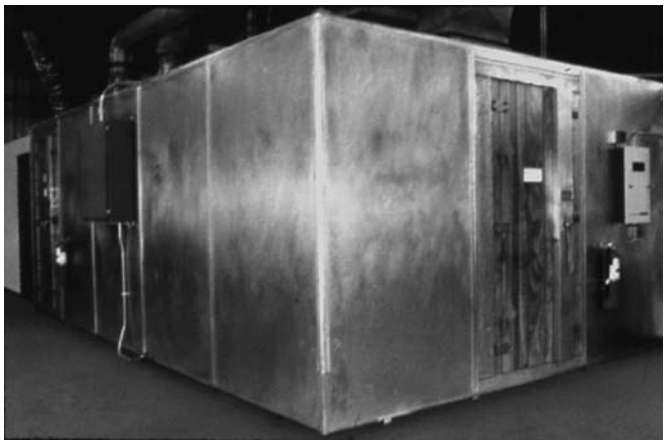


Fast Pre-Compliance Test Results

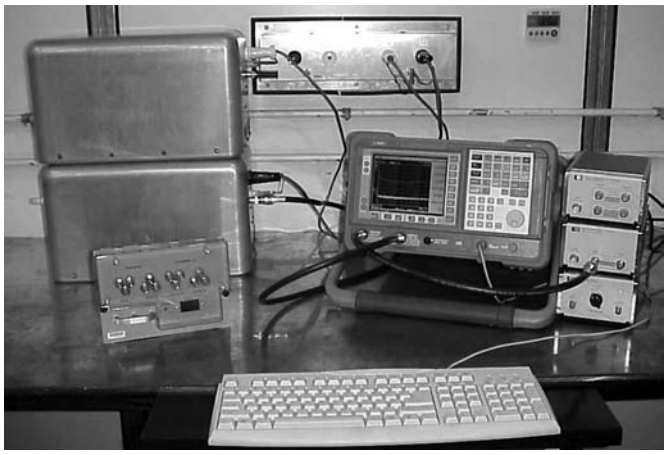
Computer-generated graphics and test reports provide the customer with fast turnaround on all testing.

On-site RFI filter design/applications engineers are available to assist in evaluating test results and to determine cost-effective solutions to conducted emissions problems before going to agencies.

Please contact your local Curtis representative or the factory sales staff to coordinate pre-compliance testing of your equipment at Curtis Industries.



The Curtis screen room provides complete RFI isolation for equipment under test and the test instrumentation.



Computer-controlled test equipment assures fast turnaround on RFI emissions testing.

Curtis can provide environmental testing to demonstrate performance and survival in harsh conditions.

Custom Filter Capabilities *We Build Confidence!*

Curtis has the capability to modify any of our standard filters or to work with you from design to delivery on a completely custom filter to meet your exact mechanical and electrical requirements. The Curtis Filter Engineering Team, drawing from our extensive knowledge and experience, is fully equipped and qualified to consult with you on your RFI and EMI emission control problems. Curtis has the ability to test your equipment in our technologically advanced screen room to help you select the proper filter for your application.

Information We Need From You

Specifications:

* Rated Voltage: _____ * Line Frequency: _____

* Rated Current: _____ * Max. Temperature: _____

Current Overload: _____ Humidity Range: _____

Max. Leakage Current (Each Line to Ground)_____

Dimensions: _____

Terminal Type: Input (Line): _____

Output (Load): _____

Mounting Torque (Panel-Mount Models Only): _____

Test Specifications:

Hipot Test: Line to Ground: _____ VAC for One min.

Line to Line:_____ VDC for One min.

Insulation Resistance: _____

* Minimum Insertion Loss (50Ω Circuit):

	Frequency (MHz)						
	.01	.15	.5	1	5	10	30
CM							
DM							

Organization Approvals: UL _____ CSA _____ TUV _____ Other _____

Company Name: _____ Contact: _____

E-mail Address: _____ Phone Number: _____

** Required*

Curtis Contact Information
E-mail: sales@curtisind.com **Phone Number:** 1-800-657-0853
Fax: 414-649-4279 **Address:** P.O. Box 343925, Milwaukee, WI 53234-3925

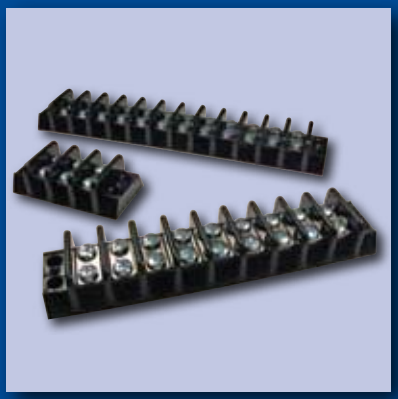
RFI Power Line Filters

Filtered Power Entry

Custom Filters

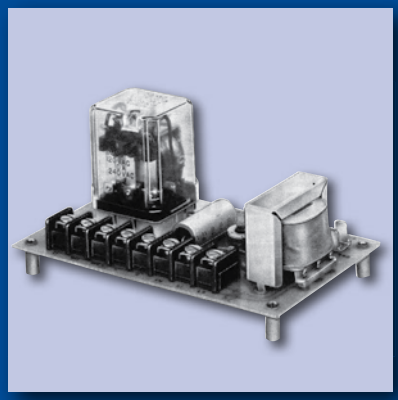
Curtis Family of Products

DIN Rail



Terminal Blocks

PCB Mount Blocks



Liquid Level Controllers

Custom Terminal Blocks

Curtis Industries

A Div. of Powers Holdings, Inc.

2400 S. 43rd St., Milwaukee, WI 53219

1-800-657-0853

www.curtisind.com