

2-6609129-8 Product Details




2-6609129-8
(5EFM4S)

TE Internal Number: 2-6609129-8

 Active

EMI/RFI Filters and Accessories

 Always EU RoHS compliant but not ELV Compliant (Statement of Compliance)

Product Highlights:

- Filter - EMI/RFI
- Filter Type = Power Entry (Filtered/Unfiltered)
- M (3-6 Amp) Series
- General Purpose Application
- Mount Style = Flanged

Documentation & Additional Information

Product Drawings:

- [Customer Drawing 5EFM4S](#) (PDF, English)

Catalog Pages/Data Sheets:

- [1654001_CORCOM_PRODUCT_GUIDE_M_SERIES](#) (PDF, English)

Product Specifications:

- None Available

Application Specifications:

- None Available

Instruction Sheets:

- None Available

CAD Files: ([CAD Format & Compression Information](#))

- [2D Drawing](#) (DXF, Version 5)
- [3D Model](#) (IGES, Version 5)
- [3D Model](#) (STEP, Version 5)

Additional Information:

- [Product Line Information](#)

Additional Product Images:

- [Insertion Loss/Specifications](#)

Related Products:

- [Tooling](#)

Product Features (Please use the Product Drawing for all design activity)

Product Type Features:

- [Product Type](#) = Filter - EMI/RFI
- [Filter Type](#) = Power Entry (Filtered/Unfiltered)
- [Series](#) = M (3-6 Amp)
- [Filtered](#) = Yes
- [Type of Connector](#) = IEC 320/C-14

Electrical Characteristics:

- [Input Voltage Select](#) = Quad AC
- [Current Rating \(A\)](#) = 5
- [Voltage Selection](#) = 4 Voltage
- [Voltage ≤ \(VAC\)](#) = 100, 120, 230, 240
- Leakage Current (Line-to-Ground) Max. @ 250 VAC 50 Hz (mA) = 0.5
- Leakage Current (Line-to-Ground) Max. @ 120 VAC 60 Hz (mA) = 0.25

Termination Features:

- [Terminal Input - Output Combination](#) = IEC - .110 Faston

Body Features:

- [Mount Style](#) = Flanged
- [Switch Type](#) = DPST

Configuration Features:

- [Fuse Options](#) = Dual, Single
- [Fuse Holder Type](#) = Selectable

Industry Standards:

- [RoHS/ELV Compliance](#) = RoHS/Not ELV Compliant
- [Lead Free Solder Processes](#) = Not relevant for lead free process
- RoHS/ELV Compliance History = Always was RoHS not ELV compliant
- Approved Standards = CSA Certified, VDE Approved, UL Recognized

Conditions for Usage:

- Facility Installation = No
- Need Min Size With IEC Connector = Yes
- Need Optional Switch, Fusing, Or Voltage Selector = Yes

Operation/Application:

- [Application](#) = General Purpose

Other:

- Brand = Corcom
- Comment = Voltage Selectable

Slim Power Entry Module Family with Multiple Options

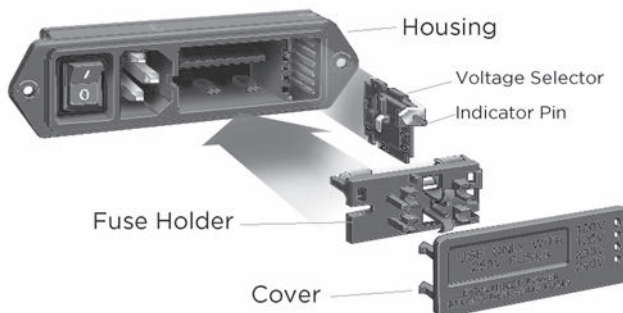
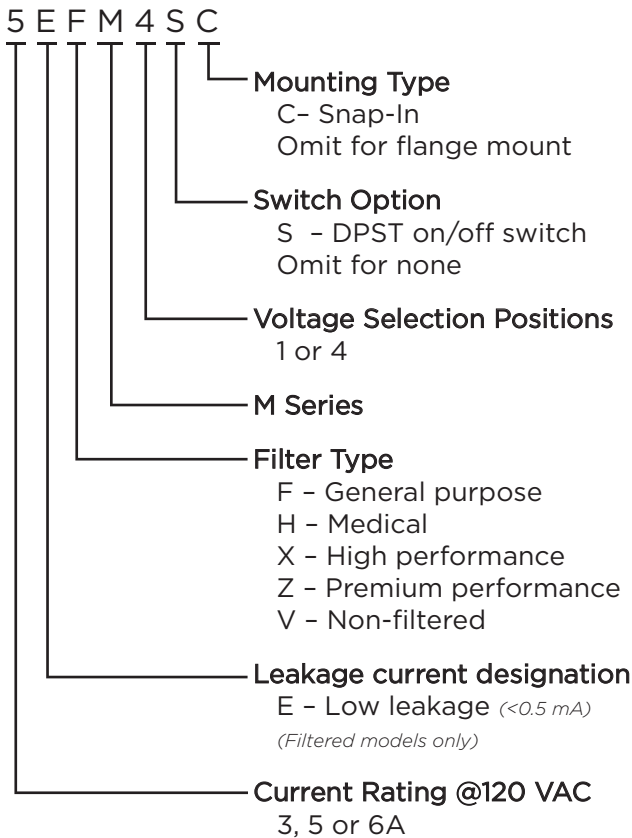
M Series



UL Recognized
CSA Certified
VDE Approved



Ordering Information



M Series

- Family of slim power entry modules that consume minimal depth behind panel
- Four compact modules each provide a different option combination
- Available non-filtered or with one of four filter circuits designed to meet a wide variety of applications
- Optional voltage selector configured for either 2 or 4 voltage selection
- Optional DPST on/off switch
- Included fuseholder accepts either single 3AG fuse or dual metric fuses
- Snap-in or flange mounting styles

Filter Types

H Models provide a basic performance dual element circuit EMI filter with minimal leakage current, suitable for medical applications, with attenuation similar to the EAH Series power inlet filter.

F Models provide a basic performance dual element circuit EMI filter, with attenuation similar to the EEA Series Power Inlet Filter.

X Models provide a high performance three element differential circuit filter, with extended EMI attenuation similar to the X Series chassis filter, suitable for bringing most digital equipment (including switching power supplies) into compliance with FCC Part 15J, Class B conducted emissions limits.

Z Models provide a premium performance three element differential circuit filter, with enhanced EMI low frequency attenuation similar to the P Series Z models, suitable for bringing most digital equipment (including switching power supplies) into compliance with EN55022 Level B as well as FCC Part 15J. For minimum panel footprint, see the P series on page 192.

Slim Power Entry Module Family with Multiple Options *(continued)*

M Series

Specifications

Maximum leakage current each Line to Ground:

	HM	FM	XM/ZM
@ 120 VAC 60 Hz:	2 μ A	.25 mA	.30 mA
@250 VAC 50 Hz:	5 μ A	.50 mA	.50 mA

Hipot rating (one minute):

Line to Ground:	2250 VDC
Line to Line:	1450 VDC
Line to Load (switch off) non-filtered:	2500 VAC

Rated Voltage (max.): 250VAC

Operating Frequency: 50/60 Hz

Rated Current @ 120 VAC: 3 to 6A

Rated Current @ 250 VAC:

3A models:	2A
5A models:	4A
6A Switched models:	5A
6A non-switched models:	6A

Required Fuse(s): Reversible fuseholder accepts one .25 x 1.25" (not included) or two 5 x 20mm (not included)

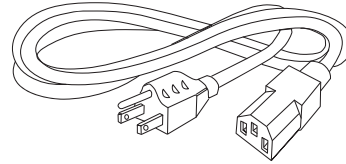
Switch: DPST
100,000 operations at 70A max. inrush

Available Part Numbers

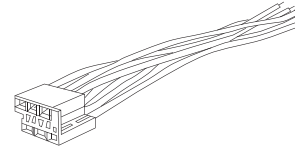
Non-Filtered Models				
Voltage Selections	Flange Mount		Snap-In	
1	6VM1	6VM1S	6VM1C	6VM1SC
2	6VM2	6VM2S		
4	6VM4	6VM4S	6VM4C	6VM4SC
General Purpose Filters				
1	5EFM1	5EFM1S	5EFM1C	5EFM1SC
4	5EFM4	5EFM4S	5EFM4C	5EFM4SC
Medical Filters				
1	5EHM1	5EHM1S		
4	5EHM4	5EHM4S		
High Performance - FCC-B				
1		3EXM1S		
4	3EXM4	3EXM4S		
Premium Performance - EN55022-B				
1		3EZM1S		
4	3EZM4	3EZM4S		

Accessories

GA400: NEMA 5-15P to IEC 60320-1 C-13 line cord



MA100: Power interconnect assembly
For voltage select models. 8.5" wire leads



MA101: Plug only

MA102: Strip of 100 pins for use with MA101

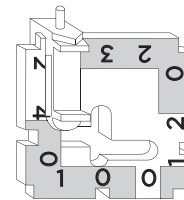
MA104: Individual pins for use with MA101

MA302: Two Voltage Selection Card

Marked 120V/240V. One card comes standard with every 2 voltage M series module

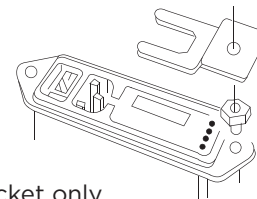
MA304: Four Voltage Selection Card

Marked 100V/120V/230V/240V. One card comes standard with every 4 voltage M series module



MA400: Medical safety bracket assembly

Prevents inadvertent removal of fuse(s)



MA401: Bracket only

MA402: Standoff only

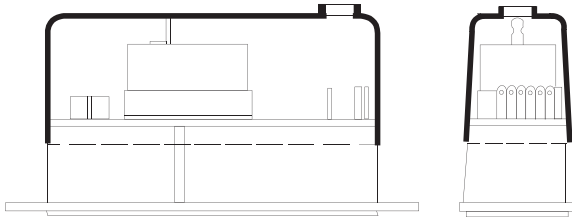
Slim Power Entry Module Family with Multiple Options *(continued)*

M Series

Accessories *(continued)*

MA601 - 604: Insulating Boot

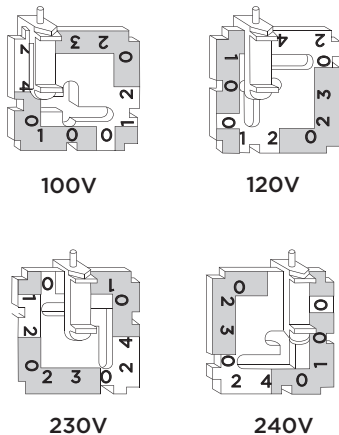
Plastic shroud for back of M series to prevent inadvertent access to connections



- MA601: Fits M4S versions
- MA602: Fits M1S versions
- MA603: Fits M4 versions
- MA604: First M1 versions

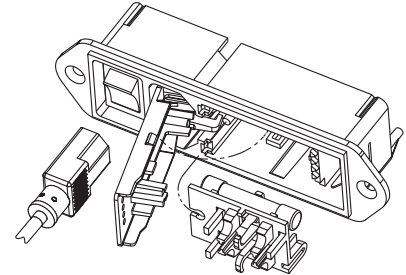
Voltage Selection

1. Open cover, using small blade screwdriver or similar tool *(see illustration on right)*
2. Set aside cover/fuse block assembly
3. Pull voltage selector card straight out of housing, using indicator pin
4. Orient selector card so that desired voltage is readable at the bottom
5. Orient indicator pin to point up when desired voltage is readable at bottom *(note that when indicator pin is fixed, successive voltages are selected by rotating the card 90° clockwise)*
6. Insert voltage selector card into housing, printed side of card facing forward toward IEC connector and edge containing the desired voltage first
7. Replace cover, and verify that indicator pin shows the desired voltage

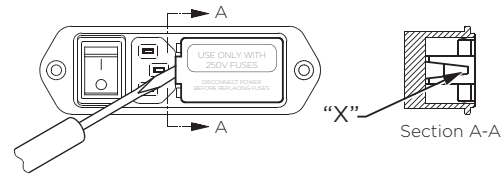


Fuse Installation Instructions

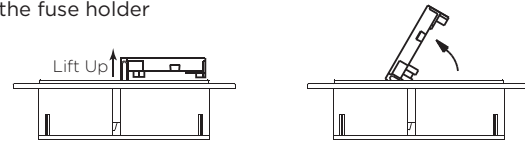
1. Remove power cord



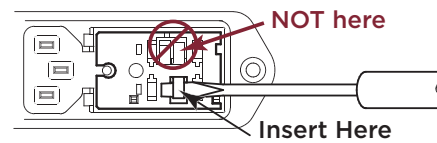
2. Insert a pocket screwdriver at point "X" as shown



3. Gently lift the entire door UP approximately 1/4" *(minimum)*. Once lifted, the door will pivot on it's hinges to expose the fuse holder



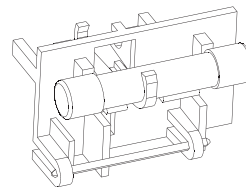
4. When the fuse holder is installed in the single fuse position, apply the screwdriver as shown and gently lift up. Use screwdriver as shown, do not use fingers



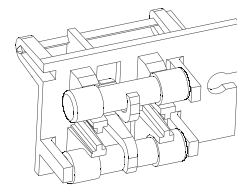
When the fuse holder is installed in the dual fuse position, it will normally release as soon as the door is opened

5. Install one (1) AG fuse or two (2) metric fuses (see below)
6. Replace fuse holder into housing
7. Swing and push to snap door back in place

Fuse Options



North American single fuse installation



Metric dual fuse installation

Install fuses on one side only, do not install both AG and metric fuses at the same time

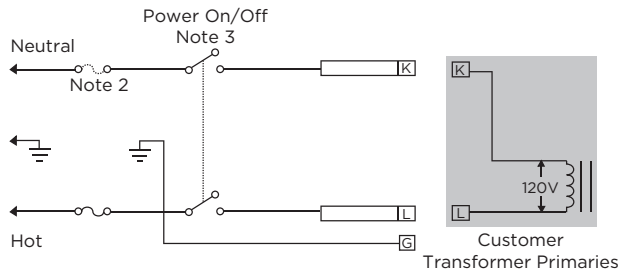
Slim Power Entry Module Family with Multiple Options *(continued)*

M Series

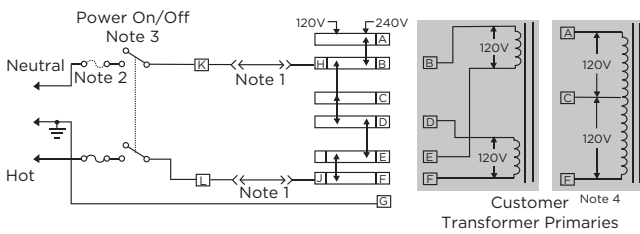
Electrical Schematics

Non-Filtered Models

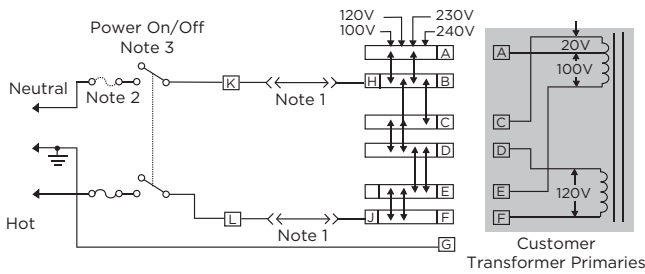
VM1



VM2



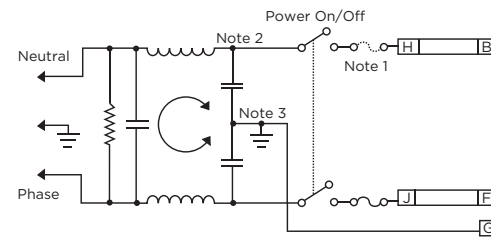
VM4



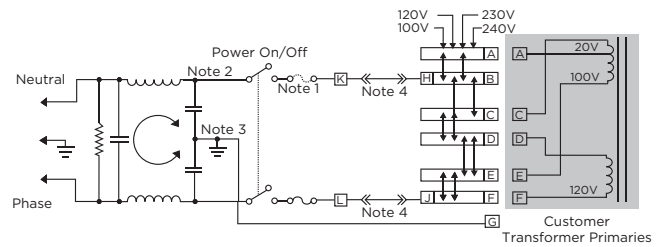
- Note 1: Jumper required if no input filter is used
- Note 2: Provision for dual Metric style fusing
- Note 3: On/off switch present only in "S" suffix models
- Note 4: When using a center-tapped transformer, the C-F winding should be the low voltage (high current) winding and must be capable of handling the full primary current in the 120V position

Filtered Models

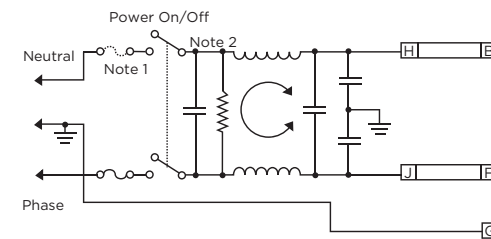
FM1 & HM1



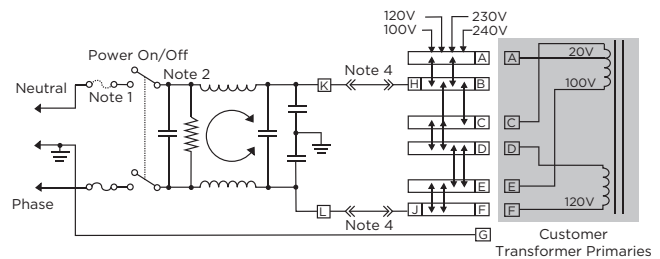
FM4 & HM4



XM1 & ZM1



XM4 & ZM4



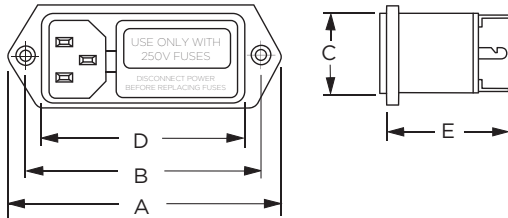
- Note 1: Provision for dual Metric style fusing
- Note 2: On/off switch present only in "S" suffix models
- Note 3: Line to ground capacitor not present on HM models
- Note 4: Models HM4, FM4, XM4 and ZM4 have added terminals K and L. External switch or jumper must be placed from K to H and L to J

Slim Power Entry Module Family with Multiple Options *(continued)*

M Series

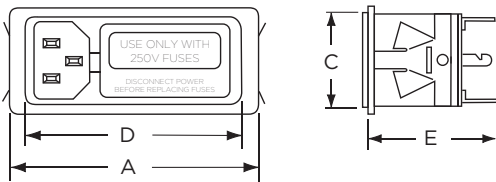
Case Styles - Non-filtered Models

6VM1



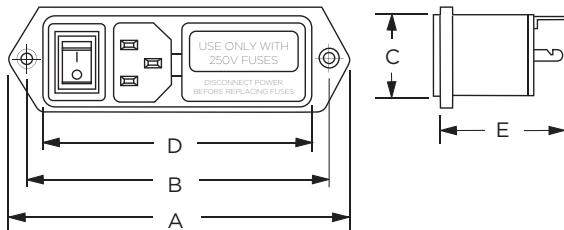
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82°
 countersink for #6 flathead screw

6VM1C



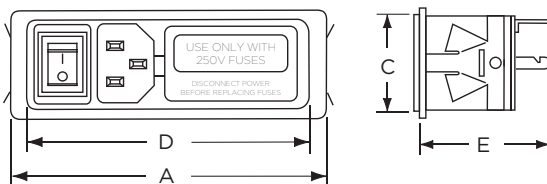
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]

6VM1S



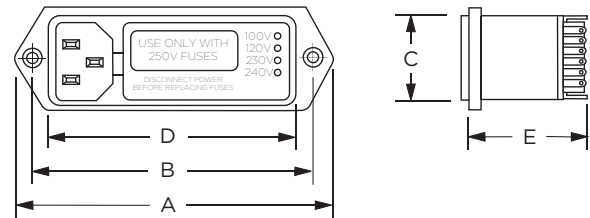
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82°
 countersink for #6 flathead screw

6VM1SC



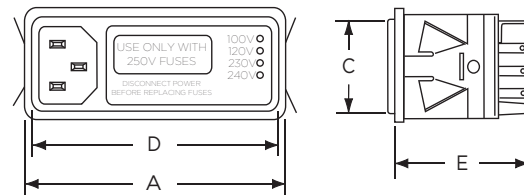
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]

6VM2 & 6VM4



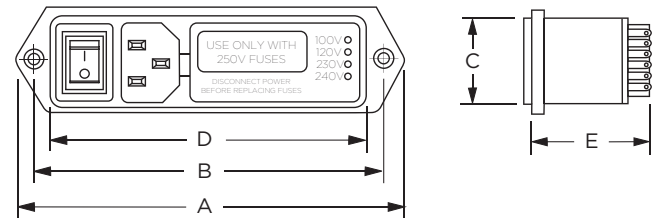
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82°
 countersink for #6 flathead screw

6VM4C



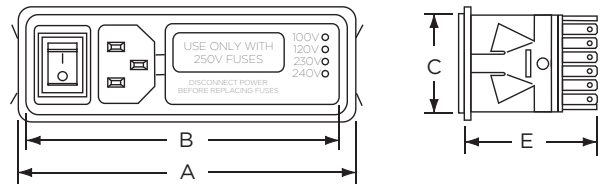
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]

6VM2S & 6VM4S



Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82°
 countersink for #6 flathead screw

6VM4SC



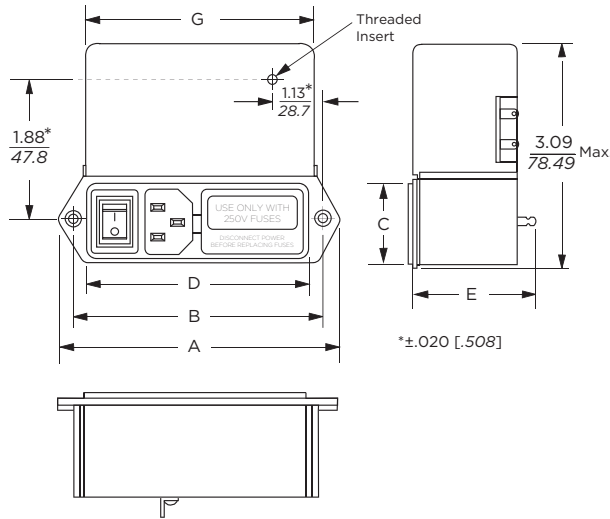
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]

Slim Power Entry Module Family with Multiple Options *(continued)*

M Series

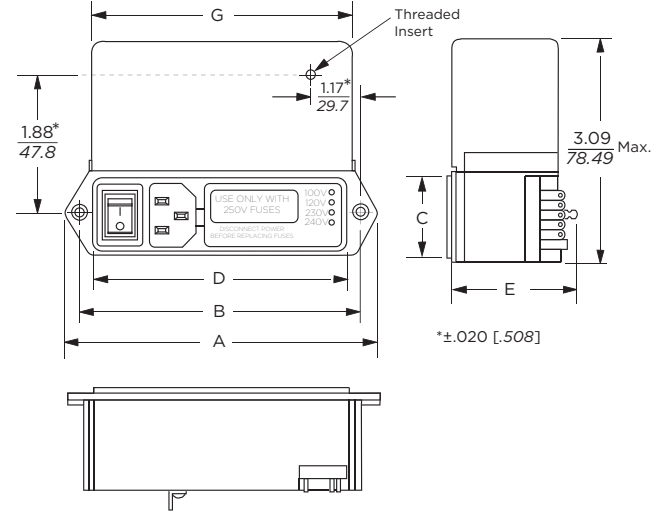
Case Styles - Filtered Models

3EXM1S & 3EZM1S



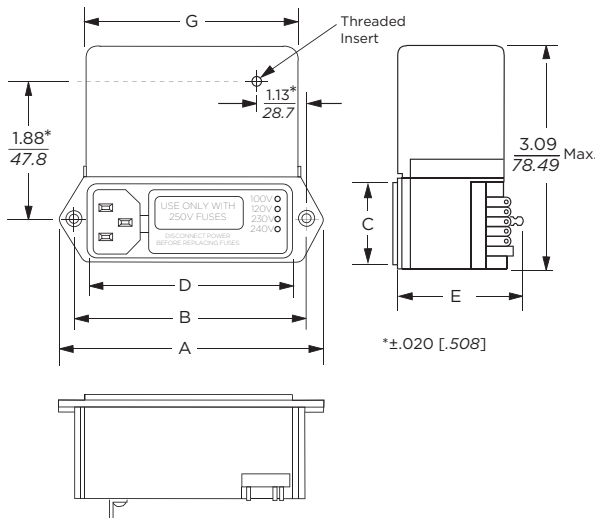
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Threaded insert: 6-32 x .25
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw

3EXM4S & 3EZM4S



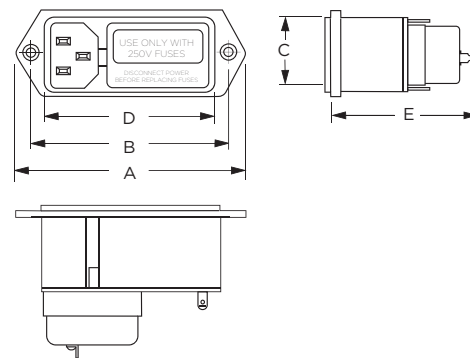
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Threaded insert: 6-32 x .25
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw

3EXM4 & 3EZM4



Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Threaded insert: 6-32 x .25
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw

5EHM1 & 5EFM1



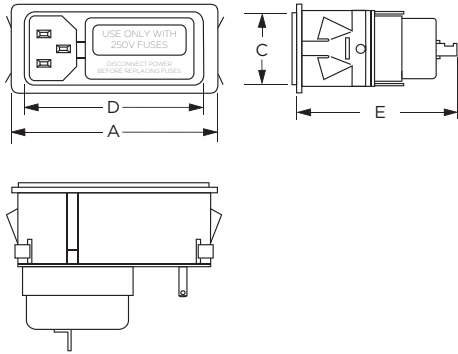
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Backplate Terminals: .110 [2.79]
 Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw

Slim Power Entry Module Family with Multiple Options *(continued)*

M Series

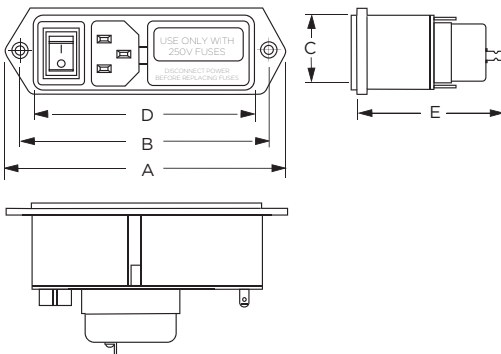
Case Styles - Filtered Models *(continued)*

5EFM1C



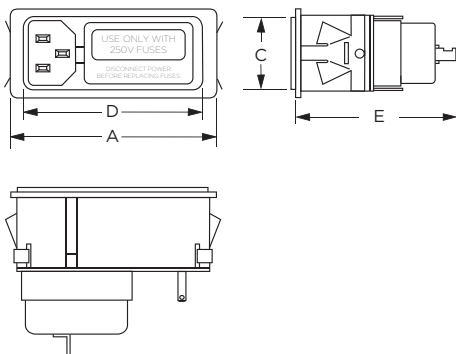
Typical Dimensions:
Line Inlet (1): IEC 60320-1 C14
Backplate Terminals: .110 [2.79]

5EHM1S & 5EFM1S



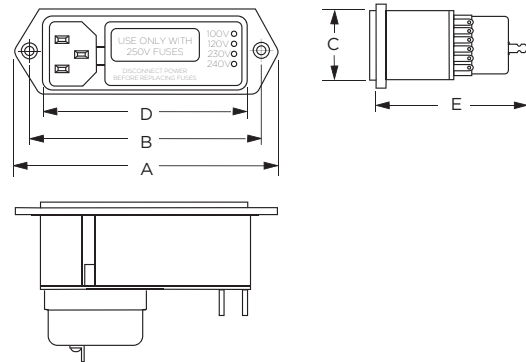
Typical Dimensions:
Line Inlet (1): IEC 60320-1 C14
Backplate Terminals: .110 [2.79]
Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw

5EFM1SC



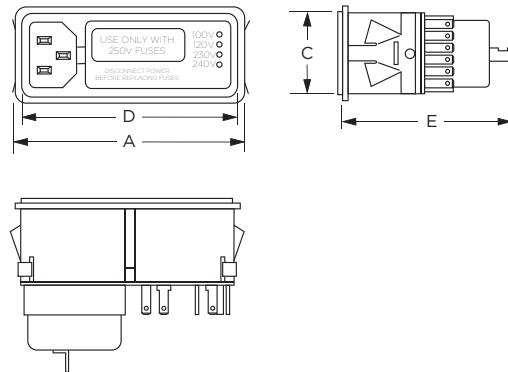
Typical Dimensions:
Line Inlet (1): IEC 60320-1 C14
Backplate Terminals: .110 [2.79]

5EHM4 & 5EFM4



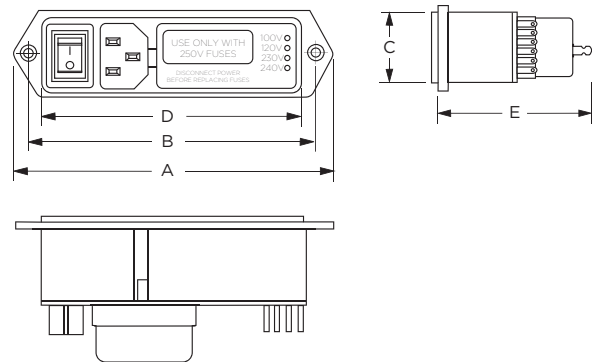
Typical Dimensions:
Line Inlet (1): IEC 60320-1 C14
Backplate Terminals: .110 [2.79]
Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw

5EFM4C



Typical Dimensions:
Line Inlet (1): IEC 60320-1 C14
Backplate Terminals: .110 [2.79]

5EHM4S & 5EFM4S



Typical Dimensions:
Line Inlet (1): IEC 60320-1 C14
Backplate Terminals: .110 [2.79]
Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw



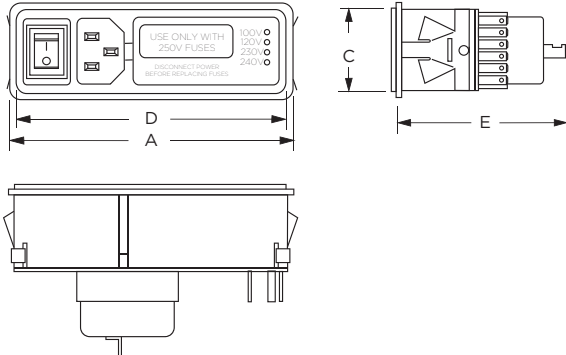
Power Inlet Filters & Power Entry Modules

Slim Power Entry Module Family with Multiple Options *(continued)*

M Series

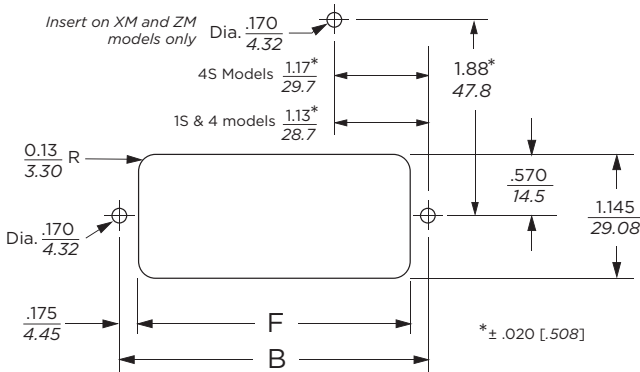
Case Styles - Filtered Models *(continued)*

5EFM4SC



Typical Dimensions:
Line Inlet (1): IEC 60320-1 C14
Backplate Terminals: .110 [2.79]

Recommended Panel Cutouts



Note:
XM and ZM models allow back mount only
FM and HM models allow front or back mounting
Mounting holes on flange mount models only
Snap-In models allow front mounting only
Snap-In models panel thickness: .06 - .09 [1.53 - 2.29]

Case Dimensions

Part No.	A (max.)	B (max.)	C (max.)	D $\pm .015$ $\pm .38$	E (max.)	F (ref.)	G (ref.)
6VM1	3.39 86.1	2.84 72.1	1.14 29.0	2.44 62.0	1.45 36.8	2.5 63.5	-
6VM1C	2.56 86.1	-	1.14 29.0	2.44 62.0	1.45 36.8	2.5 63.2	-
6VM1S	4.17 105.9	3.62 91.9	1.14 29.0	3.22 81.8	1.45 36.8	3.28 83.3	-
6VM1SC	3.34 84.8	-	1.14 29.0	3.27 83.1	1.45 36.8	3.27 83.1	-
6VM2	3.88	3.32	1.14	2.92	1.45	2.98	-
6VM4	98.6	84.3	29.0	74.2	36.8	75.7	-
6VM4C	3.04 98.6	-	1.14 29.0	2.92 74.2	1.45 36.8	2.97 75.4	-
6VM2S	4.65	4.1	1.14	3.72	1.45	3.76	-
6VM4S	118.1	104.1	29.0	94.5	36.8	95.5	-
6VM4SC	3.82 97.0	-	1.14 29.0	3.7 94.0	1.45 36.8	3.75 95.3	-
3EXM1S	4.17	3.62	1.14	3.22	1.72	3.28	3.3
3EZM1S	105.9	91.9	29.0	81.8	43.7	83.8	83.8
3EXM4	3.88	3.32	1.14	2.92	1.72	2.98	2.99
3EZM4	98.6	84.3	29.0	74.2	43.7	75.7	75.9
3EXM4S	4.65	4.1	1.14	3.72	1.72	3.76	3.8
3EZM4S	118.1	104.1	29.0	94.5	43.7	95.5	96.5
5EHM1	3.39	2.84	1.14	2.44	2.19	2.5	-
5EFM1	86.1	72.1	29.0	62.0	55.6	63.5	-
5EFM1C	2.56 65.0	-	1.14 29.0	2.44 62.0	2.19 55.6	2.49 63.2	-
5EHM1S	4.17	3.62	1.14	3.22	2.19	3.28	-
5EFM1S	105.9	91.9	29.0	81.8	55.6	83.3	-
5EFM1SC	3.34 84.8	-	1.14 29.0	3.27 83.1	2.19 55.6	3.27 83.1	-
5EHM4	3.88	3.32	1.14	2.92	2.19	2.98	-
5EFM4	98.6	84.3	29.0	74.2	55.6	75.7	-
5EFM4C	3.04 77.2	-	1.14 29.0	2.92 74.2	2.19 55.6	2.97 74.4	-
5EHM4S	4.65	4.1	1.14	3.7	2.19	3.76	-
5EFM4S	118.1	104.1	29.0	94.0	55.6	95.5	-
5EFM4SC	3.82 97.0	-	1.14 29.0	3.7 94.0	2.19 55.6	3.75 95.3	-

Slim Power Entry Module Family with Multiple Options *(continued)*

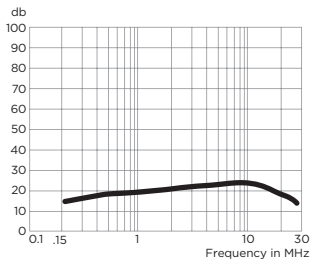
M Series

Performance Data

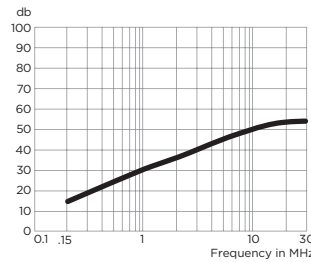
Typical Insertion Loss

Measured in closed 50 Ohm system

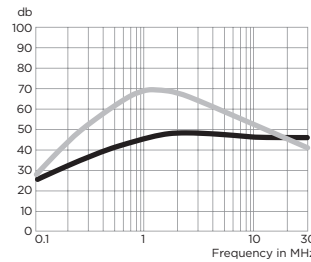
5EHM



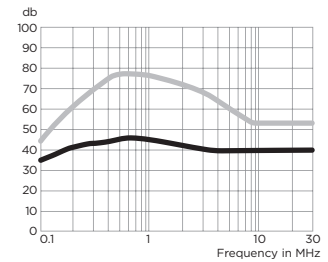
5EFM



3EXM



3EZM



— Common Mode / Asymmetrical (L-G)
— Differential Mode / Symmetrical (L-L)

Minimum Insertion Loss

Measured in closed 50 Ohm system

Common Mode / Asymmetrical (Line to Ground)

Part No.	Frequency – MHz							
	.01	.05	.15	.5	1	5	10	30
5EHM Models	-	-	14	18	19	22	22	17
5EFM Models	-	-	14	21	26	40	45	40
3EXM Models	2	13	23	40	46	44	44	44
3EZM Models	15	29	39	46	43	40	40	40

Differential Mode / Symmetrical (Line to Line)

Part No.	Frequency – MHz									
	.02	.03	.05	.07	.15	.5	1	5	10	30
3EXM Models	-	-	-	5	34	62	68	60	50	40
3EZM Models	5	13	28	37	55	75	75	62	54	44

SEFM45

SAFETY ORGANIZATION(S)

THIS FILTER HAS BEEN FORMALLY RECOGNIZED, CERTIFIED OR APPROVED BY THE LISTED AGENCY. THEREFORE, ALL TEST/REQUIREMENTS SPECIFIED IN THE LATEST REVISION OF THE FOLLOWING AGENCY STANDARDS HAVE BEEN MET:

UL RECOGNIZED	UL 1283
CSA CERTIFIED	CSA 22.2, NO.0,0.4,8
VDE APPROVED	VDE 565-3, 625

OPERATING SPECIFICATIONS:

LINE VOLTAGE/CURRENT: 5 AMP., 120 VAC
4 AMP., 250 VAC
4 AMP./40°C, 250 VAC

LINE FREQUENCY: 50-60Hz

MAX. LEAKAGE CURRENT, EACH LINE TO GROUND: .25mA AT 120V 60Hz
.42mA AT 250V 50Hz

OPERATING AMBIENT TEMP. RANGE: -10°C TO +40°C @ RATED CURRENT, I_o

IN AN AMBIENT, T_a, HIGHER THAN 40°C, THE MAXIMUM OPERATING CURRENT, I_o, IS AS FOLLOWS:

$$I_o = I_r \sqrt{\frac{85 - T_a}{45}}$$

RELIABILITY SPECIFICATIONS:

STORAGE TEMPERATURE: -40°C TO +85°C
HUMIDITY: 21 DAYS @ 40°C 95% RH
CURRENT OVERLOAD TEST: 6 TIMES RATED CURRENT FOR 8 SECONDS

TEST SPECIFICATIONS:

INDUCTANCE: .93mH NOMINAL
CAPACITANCE: (MEASURED AT 1 KHz, 0.25 VAC MAX., 25°C ±1°C)

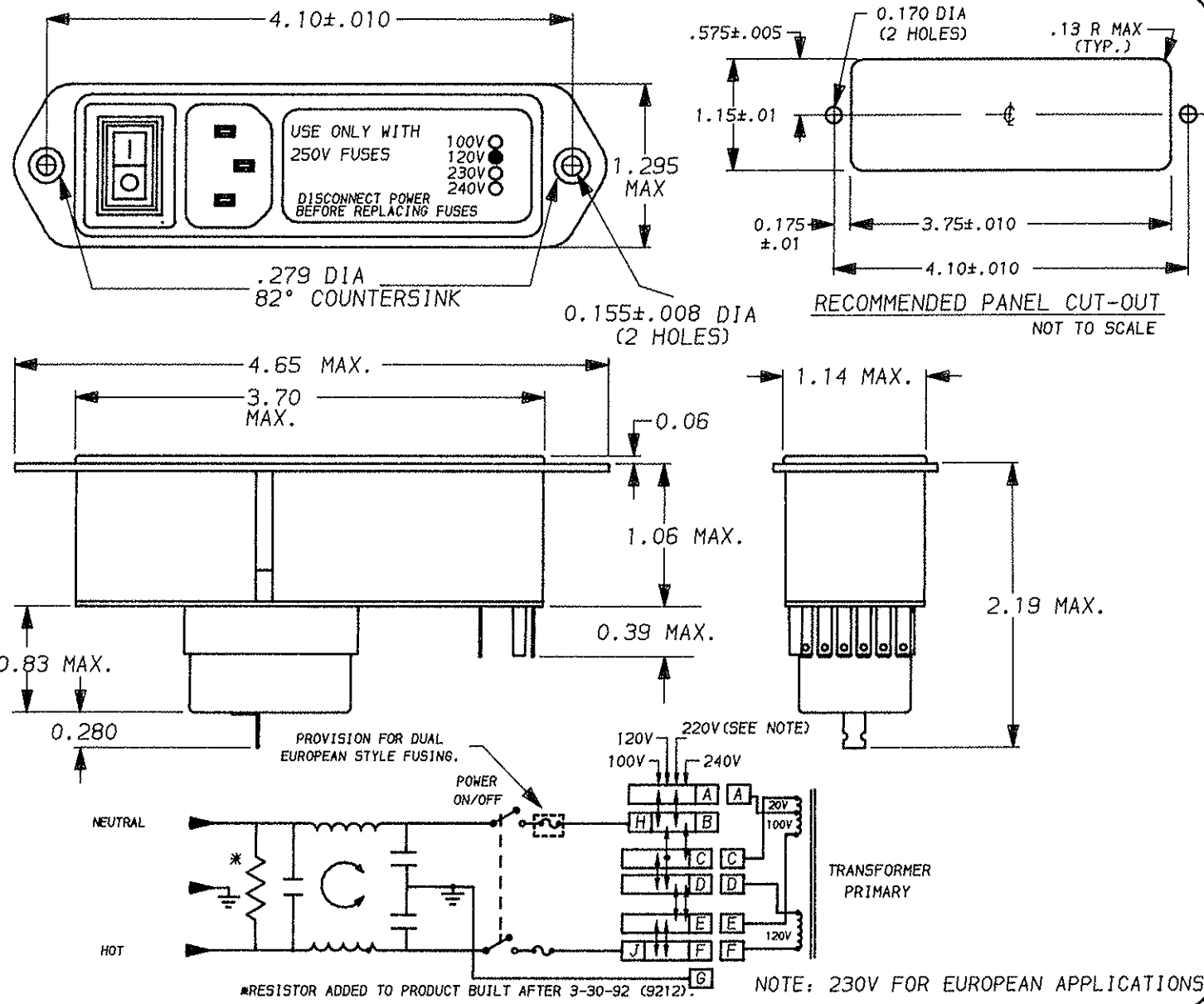
LINE TO LINE: .009µF ±20%
LINE TO GROUND: .005µF ±20%
DISCHARGE RESISTOR: 1.5 MΩ
LINE/GROUND AND LINE/LINE: 6000 MΩ (MIN)
INSULATION RESISTANCE (W/O DISCHARGE RESISTOR): AT 100 VDC
20°C AND 50% RH

RECOMMENDED RECEIVING INSPECTION HIPOT:

LINES TO GROUND: 1500 VAC FOR 1 MINUTE
LINE TO LINE: 1450 VDC FOR 1 MINUTE

FILTER APPROVAL:

THE BEST WAY TO SELECT AND QUALIFY A FILTER IS FOR YOUR ENGINEERING TO TEST THE UNIT IN YOUR EQUIPMENT.



50Ω - 50Ω (MINIMUM) INSERTION LOSS								
FREQUENCY MHz	.15	.50	1.0	2.0	5.0	10	20	30
COMMON dB	14	21	26	33	40	45	50	40
DIFF. dB								

UNLESS OTHERWISE SPECIFIED, TOLERANCE TO BE ±.025

MATERIAL & FINISH: AS SUPPLIED

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corcom
LIBERTYVILLE, IL 60048

POWER LINE FILTER

DATE: 4-18-94 CATALOG NO. SEFM45 REV. 05

APPRVD. CAD NO. SEFM45.05