

## Slim Power Entry Module Family with Multiple Options

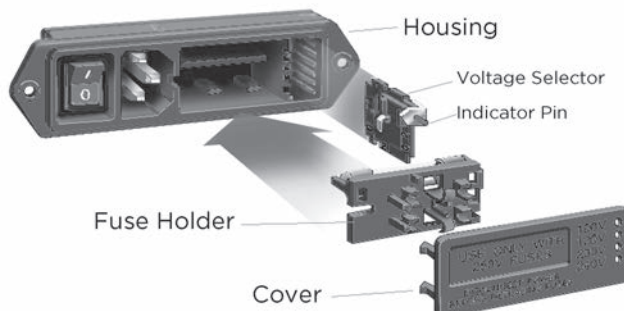
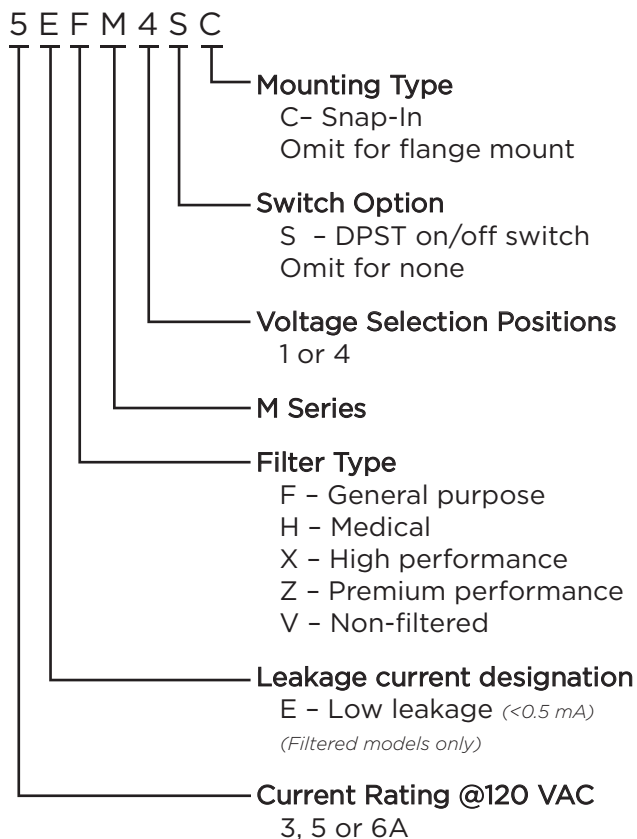
# M Series



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 $\mu$ A	.25 mA	.30 mA
@250 VAC 50 Hz:	5 $\mu$ 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

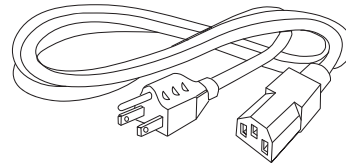
1		3EXM1S		
4	3EXM4	3EXM4S		

### Premium Performance - EN55022-B

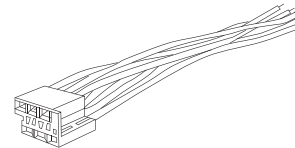
1		3EZM1S		
4	3EZM4	3EZM4S		

## 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

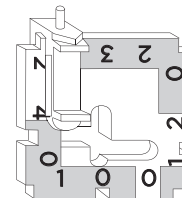
MA104: Individual pins for use with MA101

MA302: Two Voltage Selection Card

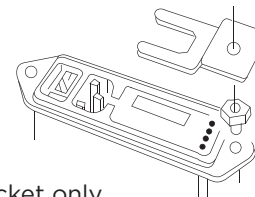
Marked 120V/240V. One card comes standard with every 2 voltage M series module

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

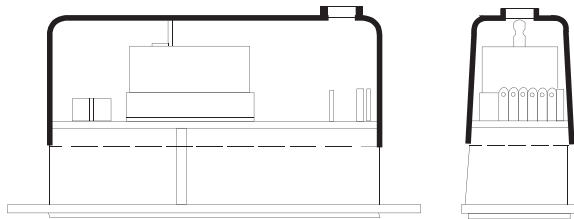
**Slim Power Entry Module Family with Multiple Options** *(continued)*

# 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

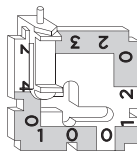
**MA602:** Fits M1S versions

**MA603:** Fits M4 versions

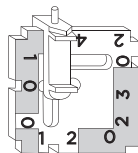
**MA604:** First M1 versions

## Voltage Selection

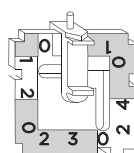
1. Open cover, using small blade screwdriver or similar tool *(see illustration on right)*
2. Set aside cover/fuse block assembly
3. Pull voltage selector card straight out of housing, using indicator pin
4. Orient selector card so that desired voltage is readable at the bottom
5. Orient indicator pin 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



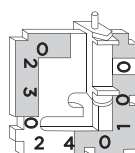
100V



120V



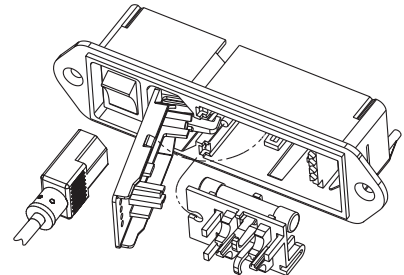
230V



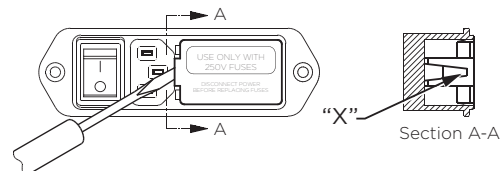
240V

## Fuse Installation Instructions

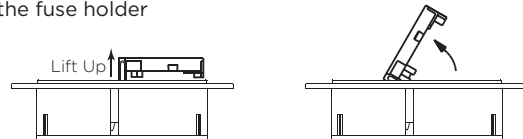
1. Remove power cord



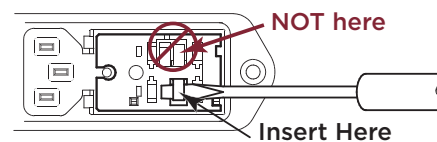
2. Insert a pocket screwdriver at point "X" as shown



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



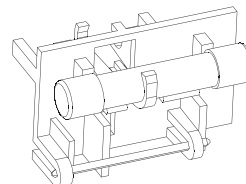
4. When the fuse holder is installed in the single fuse position, apply the screwdriver as shown and gently lift up  
Use screwdriver as shown, do not use fingers



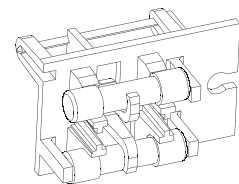
*When the fuse holder is installed in the dual fuse position, it will normally release as soon as the door is opened*

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***

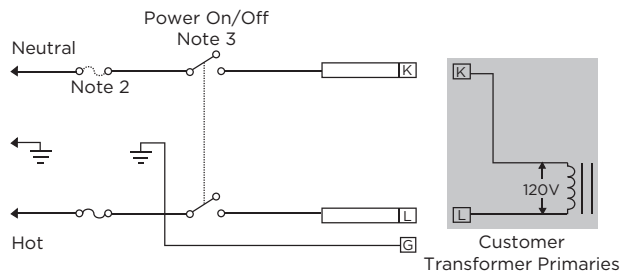
**Slim Power Entry Module Family with Multiple Options** *(continued)*

# M Series

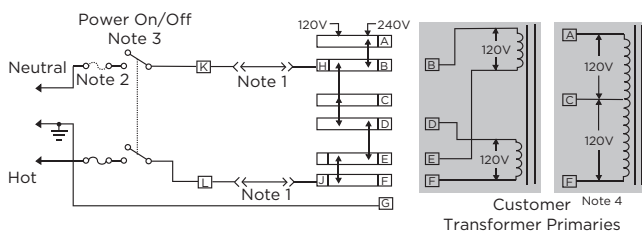
## Electrical Schematics

### Non-Filtered Models

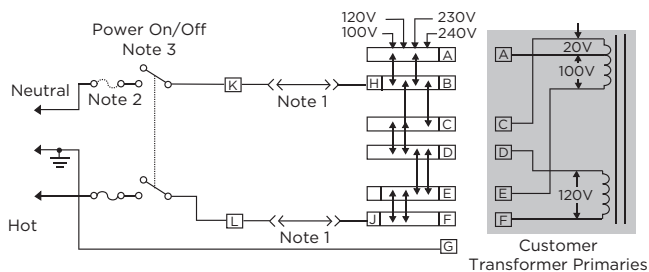
#### VM1



#### VM2



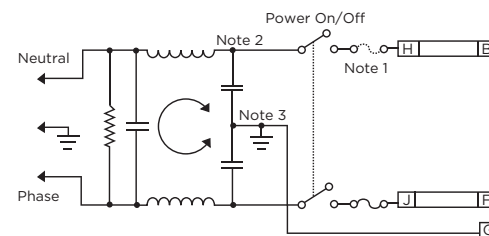
#### VM4



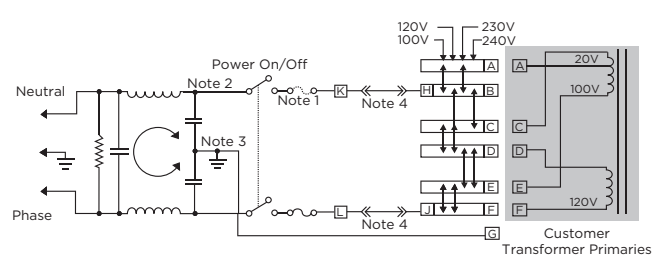
- Note 1: Jumper required if no input filter is used  
Note 2: Provision for dual Metric style fusing  
Note 3: On/off switch present only in "S" suffix models  
Note 4: When using a center-tapped transformer, the C-F winding should be the low voltage (high current) winding and must be capable of handling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

### Filtered Models

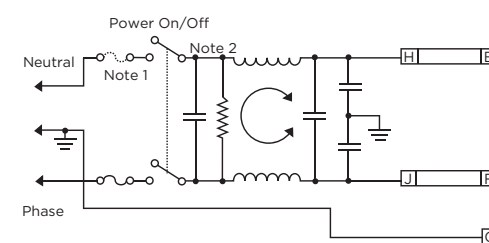
#### FM1 & HM1



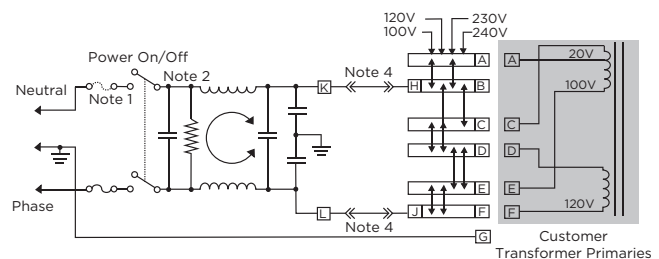
#### FM4 & HM4



#### XM1 & ZM1



#### XM4 & ZM4



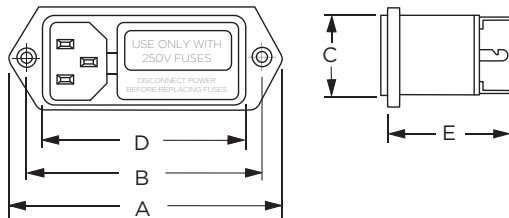
- Note 1: Provision for dual Metric style fusing  
Note 2: On/off switch present only in "S" suffix models  
Note 3: Line to ground capacitor not present on HM models  
Note 4: Models HM4, FM4, XM4 and ZM4 have added terminals K and L. External switch or jumper must be placed from K to H and L to J

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

# M Series

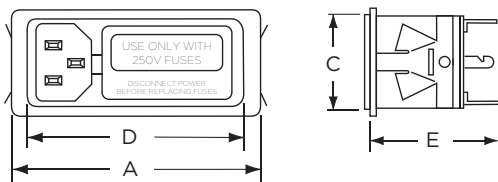
## Case Styles - Non-filtered Models

### 6VM1



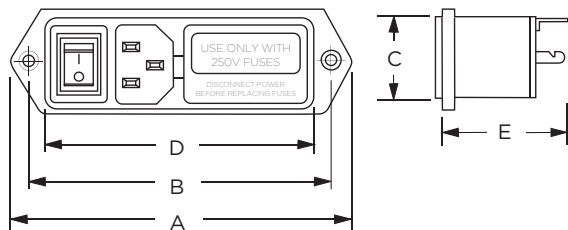
Typical Dimensions:  
Line Inlet (1): IEC 60320-1 C14  
Backplate Terminals: .110 [2.79]  
Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82°  
countersink for #6 flathead screw

### 6VM1C



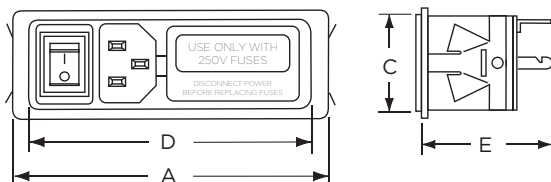
Typical Dimensions:  
Line Inlet (1): IEC 60320-1 C14  
Backplate Terminals: .110 [2.79]

### 6VM1S



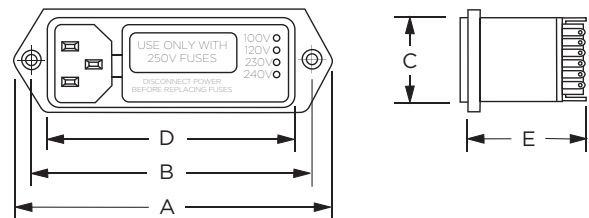
Typical Dimensions:  
Line Inlet (1): IEC 60320-1 C14  
Backplate Terminals: .110 [2.79]  
Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82°  
countersink for #6 flathead screw

### 6VM1SC



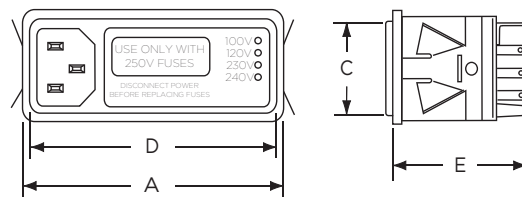
Typical Dimensions:  
Line Inlet (1): IEC 60320-1 C14  
Backplate Terminals: .110 [2.79]

### 6VM2 & 6VM4



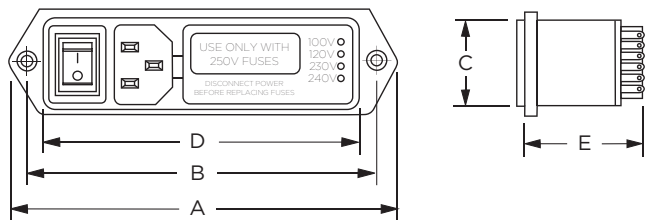
Typical Dimensions:  
Line Inlet (1): IEC 60320-1 C14  
Backplate Terminals: .110 [2.79]  
Mounting holes (2): .155 [3.94] Dia. with .279 [7.08] Dia. x 82°  
countersink for #6 flathead screw

### 6VM4C



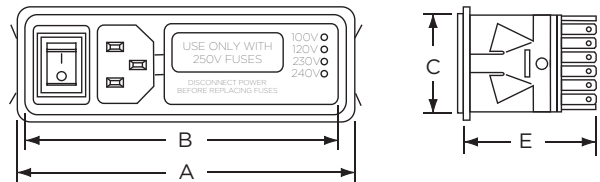
Typical Dimensions:  
Line Inlet (1): IEC 60320-1 C14  
Backplate Terminals: .110 [2.79]

### 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



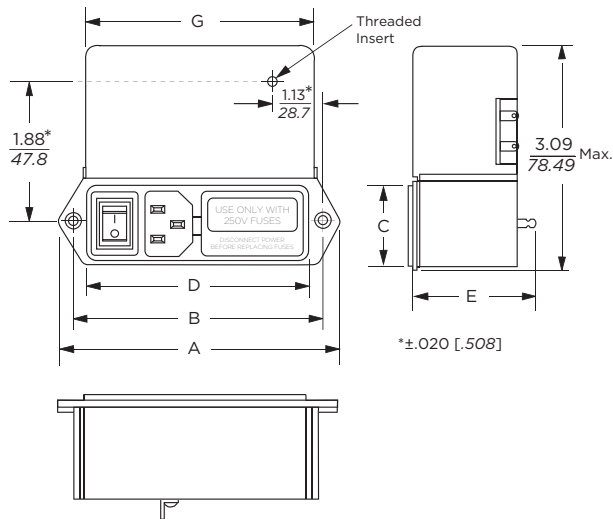
Typical Dimensions:  
Line Inlet (1): IEC 60320-1 C14  
Backplate Terminals: .110 [2.79]

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

# M Series

## Case Styles - Filtered Models

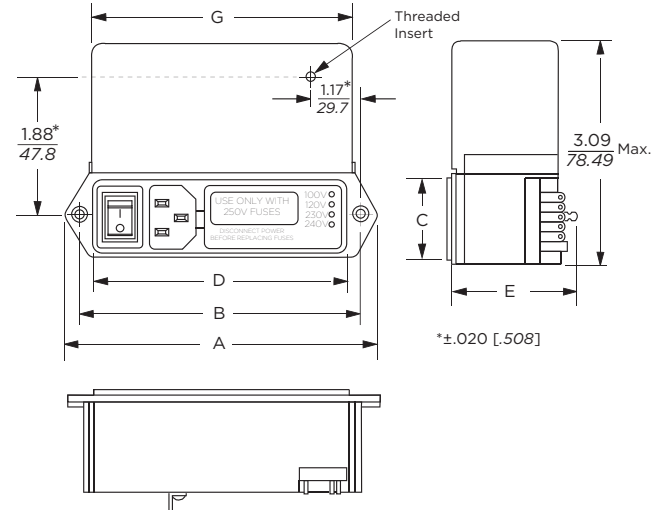
### 3EXM1S & 3EZM1S



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

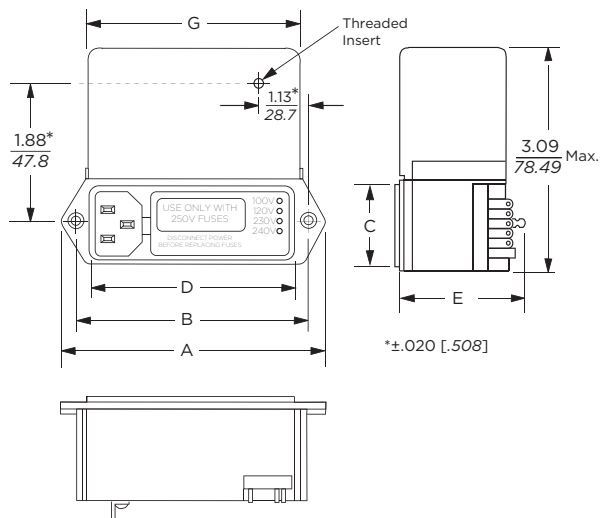
### 3EXM4S & 3EZM4S



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

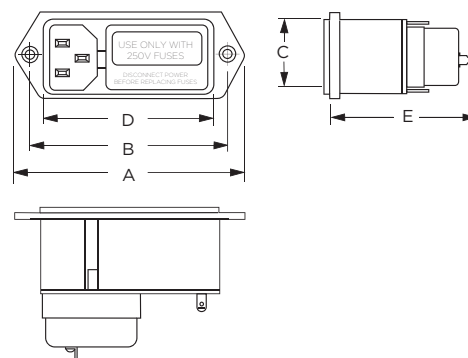
### 3EXM4 & 3EZM4



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:

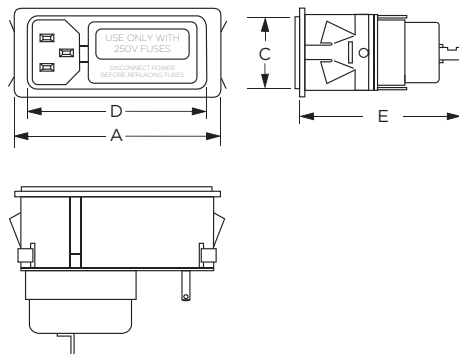
Line Inlet (1):	IEC 60320-1 C14
Backplate Terminals:	.110 [2.79]
Mounting holes (2):	.155 [3.94] Dia. with .279 [7.08] Dia. x 82° countersink for #6 flathead screw

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

# M Series

## Case Styles - Filtered Models *(continued)*

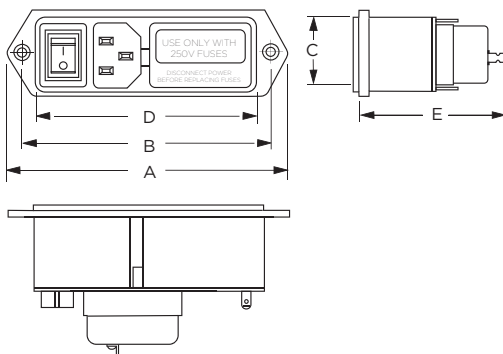
### 5EFM1C



Typical Dimensions:

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

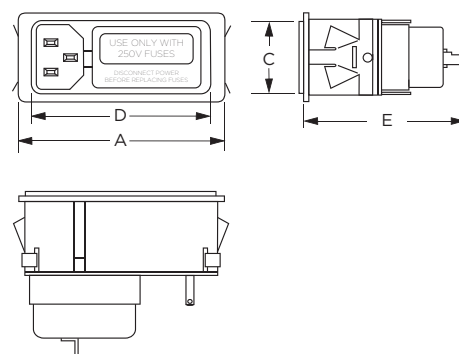
### 5EHM1S & 5EFM1S



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

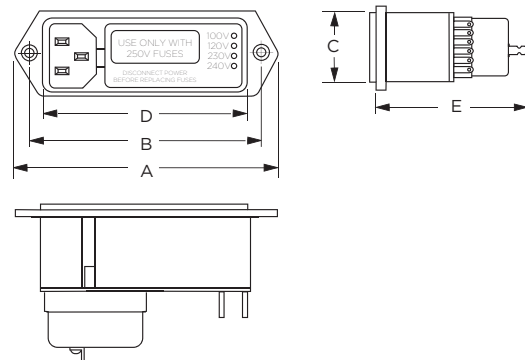
### 5EFM1SC



Typical Dimensions:

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

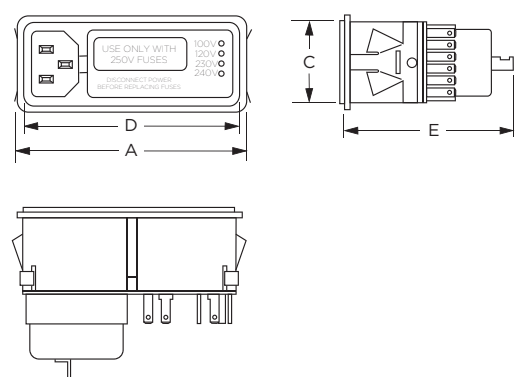
### 5EHM4 & 5EFM4



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

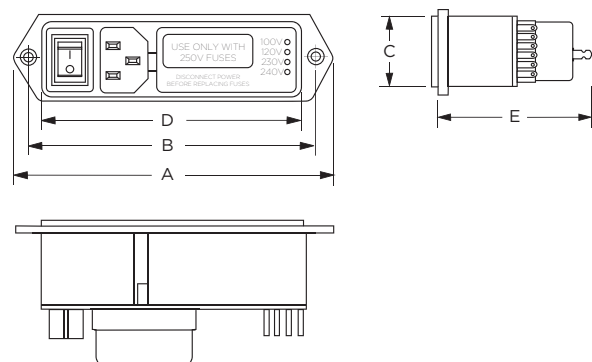
### 5EFM4C



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

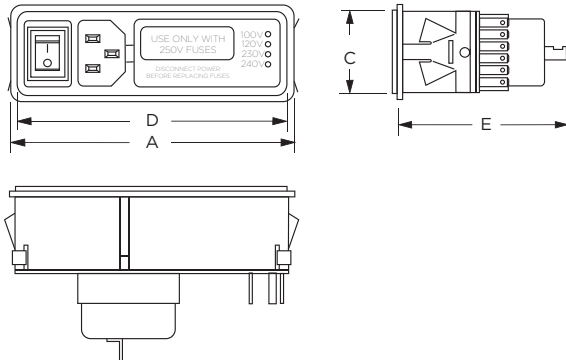


## Slim Power Entry Module Family with Multiple Options *(continued)*

# M Series

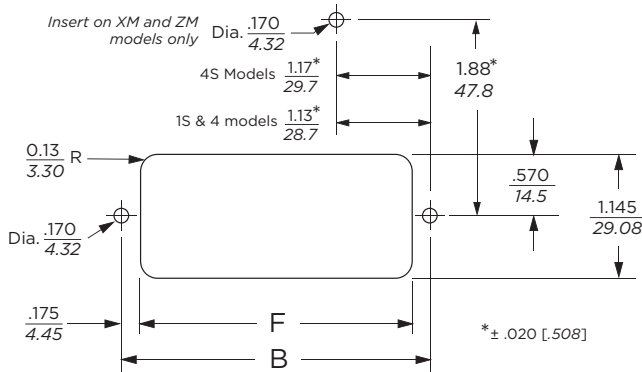
## Case Styles - Filtered Models *(continued)*

### 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 98.6	3.32 84.3	1.14 29.0	2.92 74.2	1.45 36.8	2.98 75.7	-
6VM4	3.04 98.6	-	1.14 29.0	2.92 74.2	1.45 36.8	2.97 75.4	-
6VM4C	4.65 118.1	4.1 104.1	1.14 29.0	3.72 94.5	1.45 36.8	3.76 95.5	-
6VM4S	3.82 97.0	-	1.14 29.0	3.7 94.0	1.45 36.8	3.75 95.3	-
3EXM1S	4.17 105.9	3.62 91.9	1.14 29.0	3.22 81.8	1.72 43.7	3.28 83.8	3.3 83.8
3EZM1S	3.88 98.6	3.32 84.3	1.14 29.0	2.92 74.2	1.72 43.7	2.98 75.7	2.99 75.9
3EXM4	4.65 118.1	4.1 104.1	1.14 29.0	3.72 94.5	1.72 43.7	3.76 95.5	3.8 96.5
3EZM4	3.39 86.1	2.84 72.1	1.14 29.0	2.44 62.0	2.19 55.6	2.5 63.5	-
5EHM1	2.56 65.0	-	1.14 29.0	2.44 62.0	2.19 55.6	2.49 63.2	-
5EFM1C	4.17 105.9	3.62 91.9	1.14 29.0	3.22 81.8	2.19 55.6	3.28 83.3	-
5EHM1S	3.34 84.8	-	1.14 29.0	3.27 83.1	2.19 55.6	3.27 83.1	-
5EFM1SC	3.88 98.6	3.32 84.3	1.14 29.0	2.92 74.2	2.19 55.6	2.98 75.7	-
5EHM4	3.04 77.2	-	1.14 29.0	2.92 74.2	2.19 55.6	2.97 74.4	-
5EFM4C	4.65 118.1	4.1 104.1	1.14 29.0	3.7 94.0	2.19 55.6	3.76 95.5	-
5EHM4S	3.82 97.0	-	1.14 29.0	3.7 94.0	2.19 55.6	3.75 95.3	-
5EFM4SC							



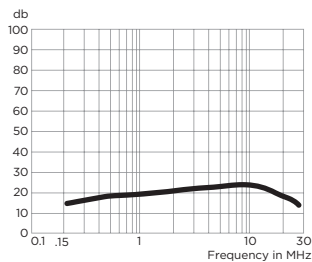
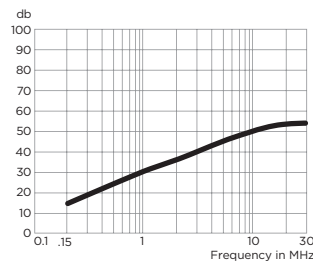
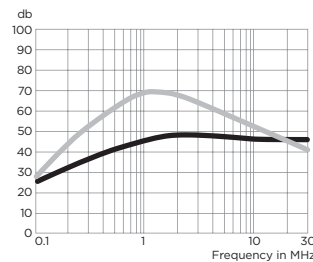
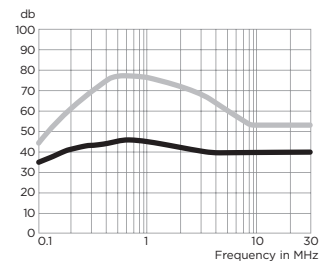
## Slim Power Entry Module Family with Multiple Options *(continued)*

# 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