M Series

UL Recognized
CSA Certified
VDE Approved

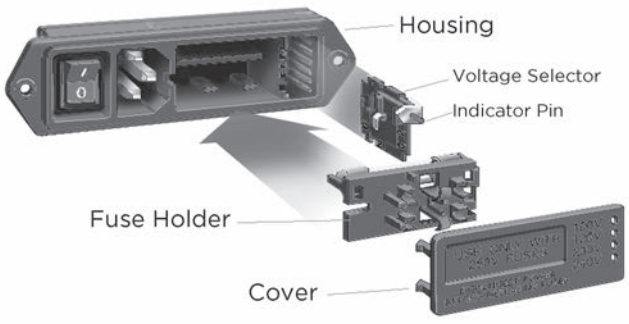
XM / ZM

VM

Ordering Information

5 E F M 4 S C

- **Mounting Type**
  - C– Snap-In
  - Omit for flange mount
- **Switch Option**
  - S – DPST on/off switch
  - Omit for none
- **Voltage Selection Positions**
  - 1 or 4
- **M Series**
- **Filter Type**
  - F – General purpose
  - H – Medical
  - X – High performance
  - Z – Premium performance
  - V – Non-filtered
- **Leakage current designation**
  - E – Low leakage *(<0.5 mA)*
  - *(Filtered models only)*
- **Current Rating @120 VAC**
  - 3, 5 or 6A



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.

Dimensions are in inches and millimeters unless otherwise specified. Values in italics are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change.

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M Series

Specifications

Maximum leakage current each Line to Ground:

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

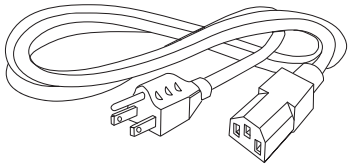
Switch: DPST
100,000 operations at 70A max. inrush

Available Part Numbers

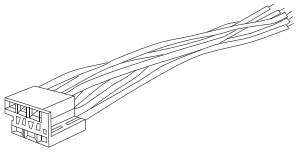
Voltage Selections	Flange Mount		Snap-In	
Non-Filtered Models				
1	6VM1	6VM1S	6VM1C	6VM1SC
2	6VM2	6VM2S		
4	6VM4	6VM4S	6VM4C	6VM4SC
General Purpose Filters				
1	5EFM1	5EFM1S	5EFM1C	5EFM1SC
4	5EFM4	5EFM4S	5EFM4C	5EFM4SC
Medical Filters				
1	5EHM1	5EHM1S		
4	5EHM4	5EHM4S		
High Performance - FCC-B	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

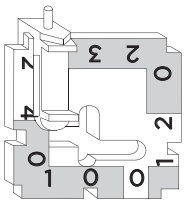
MA104: Individual pins for use with MA101

MA302: Two Voltage Selection Card

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

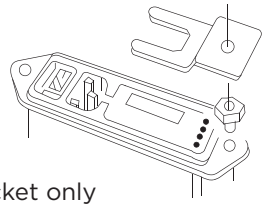
MA304: Four Voltage Selection Card

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

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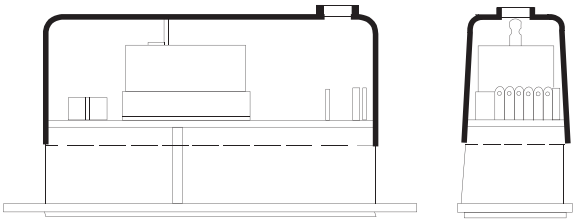
M Series

Accessories *(continued)*

MA601 - 604: Insulating Boot

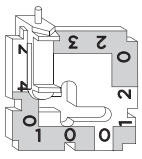
Plastic shroud for back of M series to prevent inadvertent access to connections



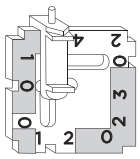
MA601: Fits M4S versions
MA602: Fits M1S versions
MA603: Fits M4 versions
MA604: First M1 versions

Voltage Selection

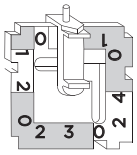
1. Open cover, using small blade screwdriver or similar tool *(see illustration on right)*
2. Set aside cover/fuse block assembly
3. Pull voltage selector card straight out of housing, using indicator pin
4. Orient selector card so that desired voltage is readable at the bottom
5. Orient indicator pin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



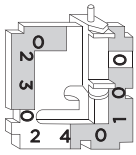
100V



120V



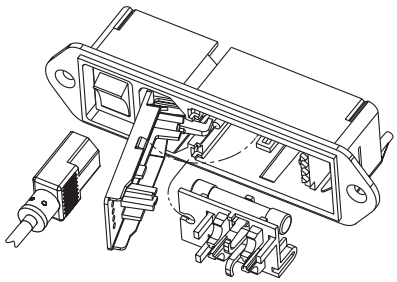
230V



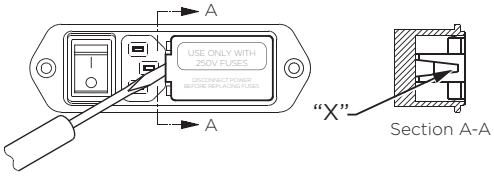
240V

Fuse Installation Instructions

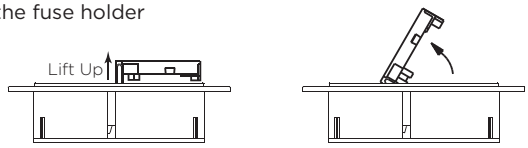
1. Remove power cord



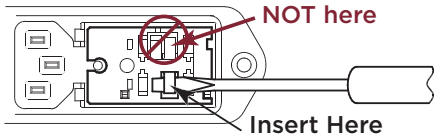
2. Insert a pocket screwdriver at point "X" as shown



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



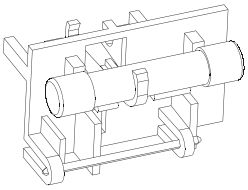
4. When the fuse holder is installed in the single fuse position, apply the screwdriver as shown and gently lift up Use screwdriver as shown, do not use fingers



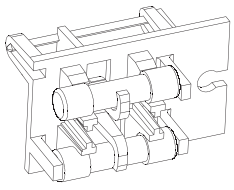
When the fuse holder is installed in the dual fuse position, it will normally release as soon as the door is opened

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

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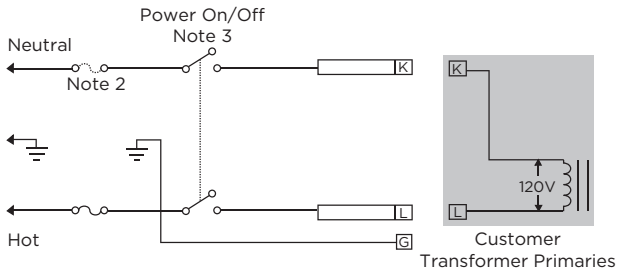
M Series

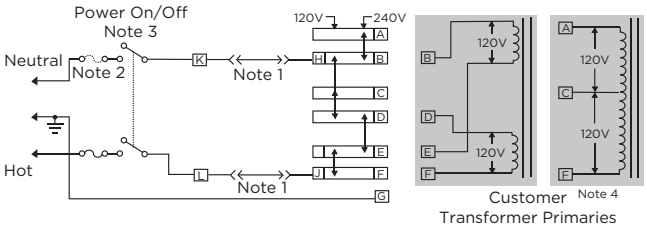
Electrical Schematics

Non-Filtered Models

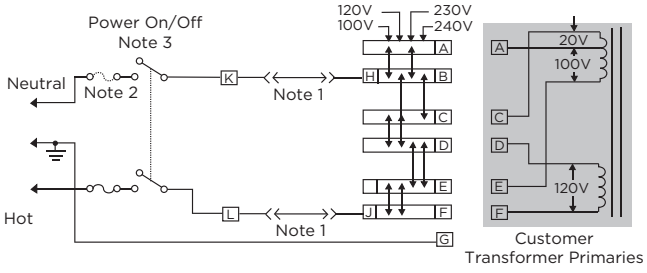
VM1



VM2



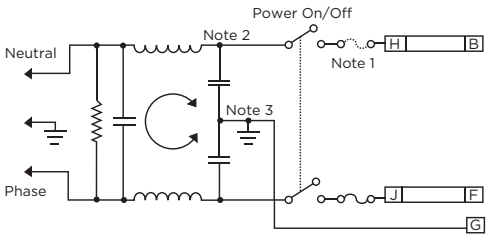
VM4



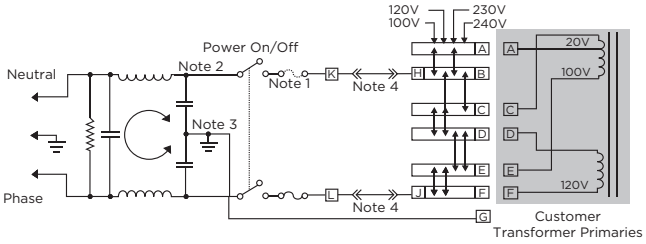
Note 1: Jumper required if no input filter is used
Note 2: Provision for dual Metric style fusing
Note 3: On/off switch present only in "S" suffix models
Note 4: When using a center-tapped transformer, the C-F winding should be the low voltage (high current) winding and must be capable of handling the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

Filtered Models

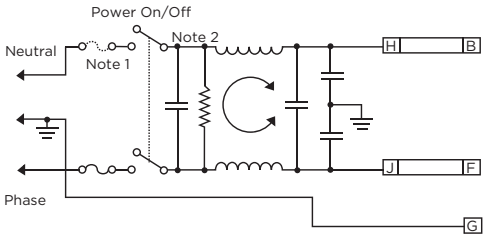
FM1 & HM1



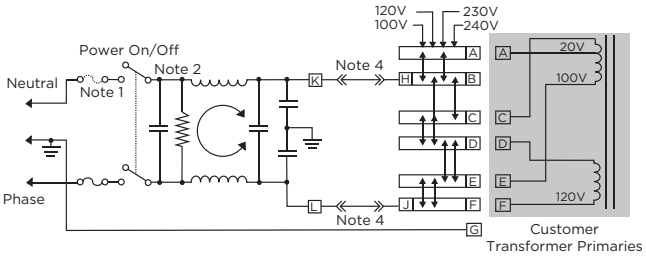
FM4 & HM4



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

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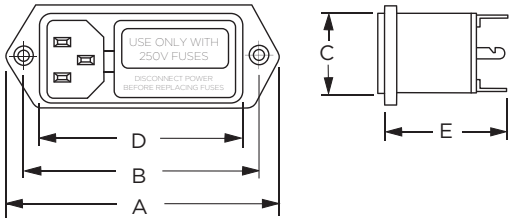
M Series

Case Styles - Non-filtered Models

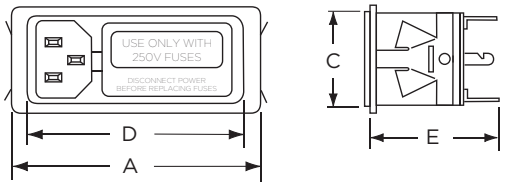
6VM1



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

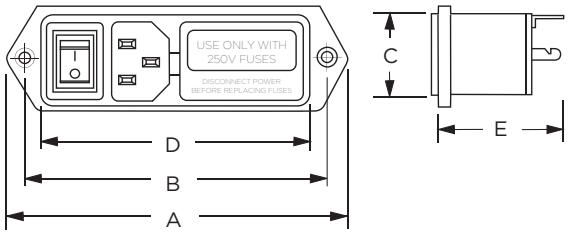
6VM1C



Typical Dimensions:

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

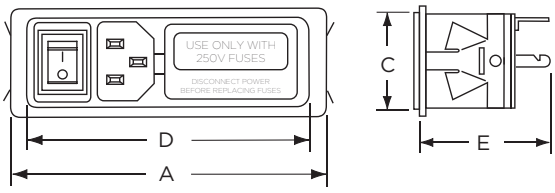
6VM1S



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

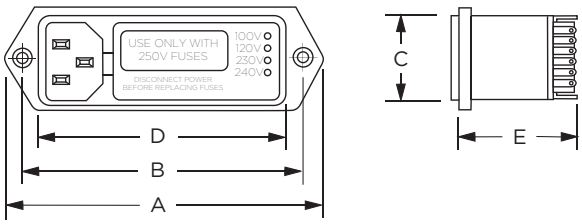
6VM1SC



Typical Dimensions:

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

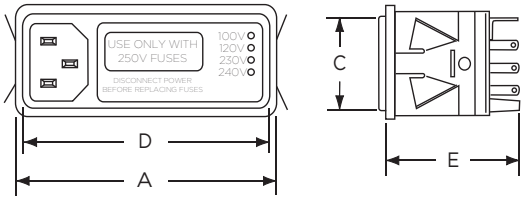
6VM2 & 6VM4



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

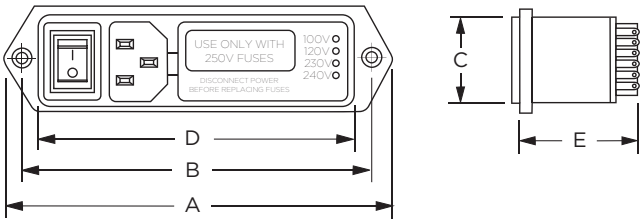
6VM4C



Typical Dimensions:

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

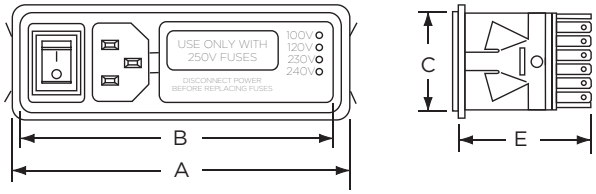
6VM2S & 6VM4S



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*]

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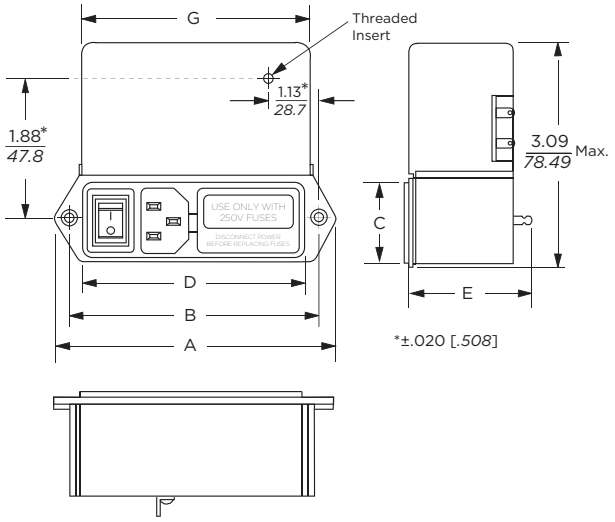
M Series

Case Styles - Filtered Models

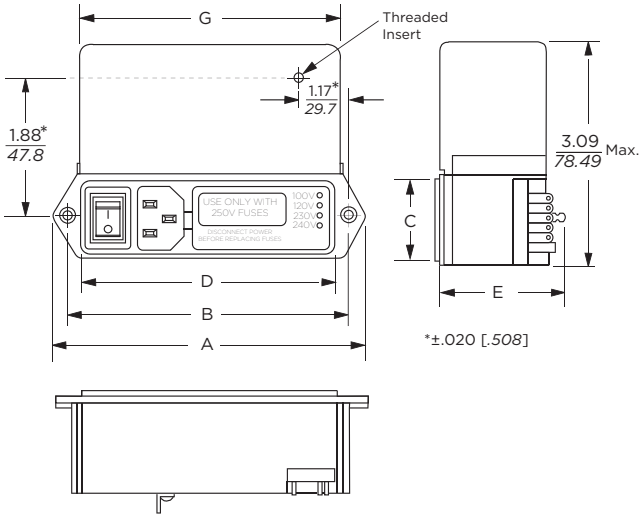
3EXM1S & 3EZM1S



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

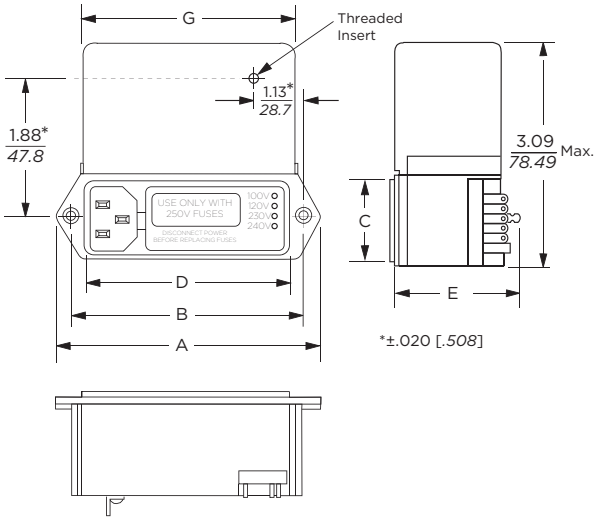
3EXM4S & 3EZM4S



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

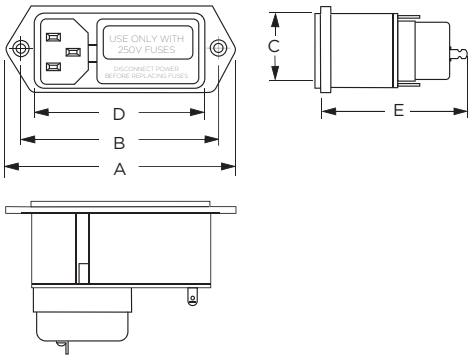
3EXM4 & 3EZM4



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

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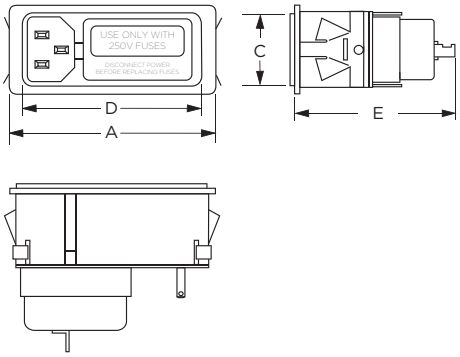
M Series

Case Styles - Filtered Models *(continued)*

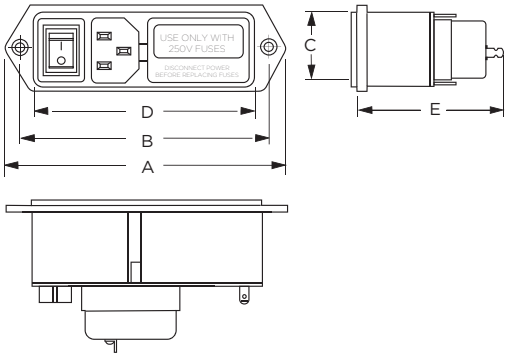
5EFM1C



Typical Dimensions:

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

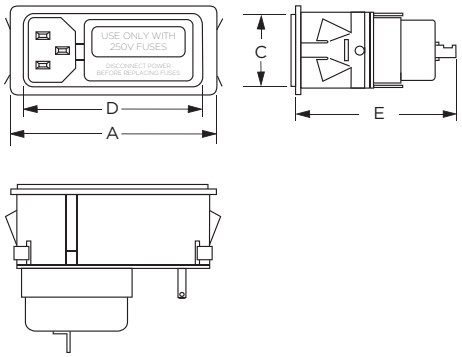
5EHM1S & 5EFM1S



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

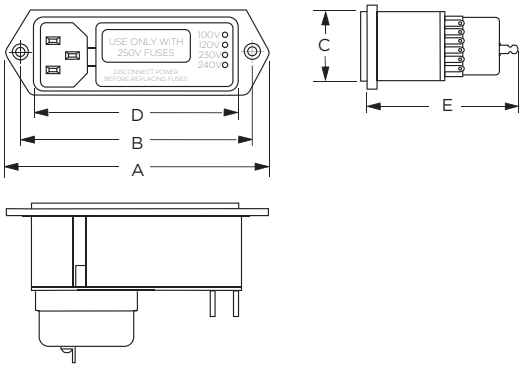
5EFM1SC



Typical Dimensions:

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

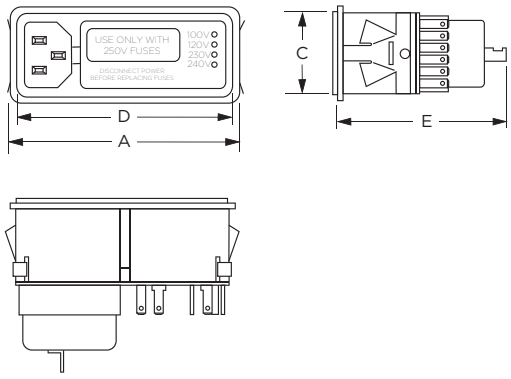
5EHM4 & 5EFM4



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

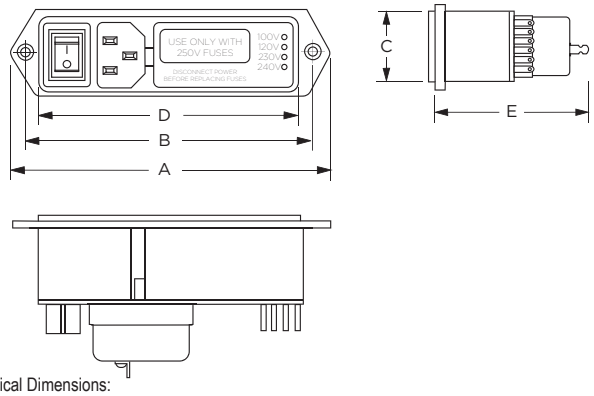
5EFM4C



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

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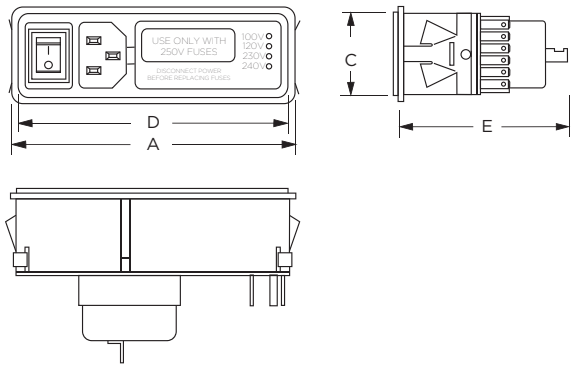
M Series

Case Styles - Filtered Models *(continued)*

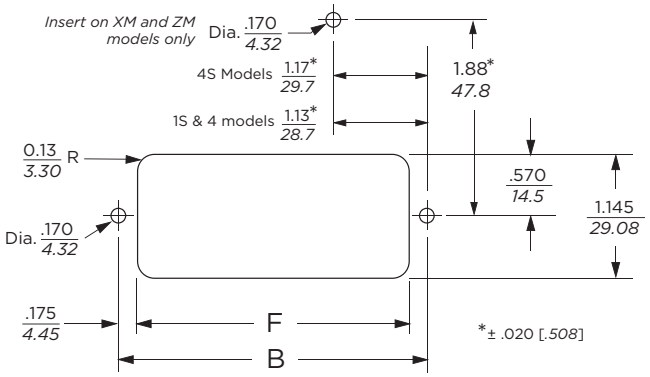
5EFM4SC



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 ± .015 ± .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 6VM4	**3.88** *98.6*	**3.32** *84.3*	**1.14** *29.0*	**2.92** *74.2*	**1.45** *36.8*	**2.98** *75.7*	-
6VM4C	**3.04** *98.6*	-	**1.14** *29.0*	**2.92** *74.2*	**1.45** *36.8*	**2.97** *75.4*	-
6VM2S 6VM4S	**4.65** *118.1*	**4.1** *104.1*	**1.14** *29.0*	**3.72** *94.5*	**1.45** *36.8*	**3.76** *95.5*	-
6VM4SC	**3.82** *97.0*	-	**1.14** *29.0*	**3.7** *94.0*	**1.45** *36.8*	**3.75** *95.3*	-
3EXM1S 3EZM1S	**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*
3EXM4 3EZM4	**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*
3EXM4S 3EZM4S	**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*
5EHM1 5EFM1	**3.39** *86.1*	**2.84** *72.1*	**1.14** *29.0*	**2.44** *62.0*	**2.19** *55.6*	**2.5** *63.5*	-
5EFM1C	**2.56** *65.0*	-	**1.14** *29.0*	**2.44** *62.0*	**2.19** *55.6*	**2.49** *63.2*	-
5EHM1S 5EFM1S	**4.17** *105.9*	**3.62** *91.9*	**1.14** *29.0*	**3.22** *81.8*	**2.19** *55.6*	**3.28** *83.3*	-
5EFM1SC	**3.34** *84.8*	-	**1.14** *29.0*	**3.27** *83.1*	**2.19** *55.6*	**3.27** *83.1*	-
5EHM4 5EFM4	**3.88** *98.6*	**3.32** *84.3*	**1.14** *29.0*	**2.92** *74.2*	**2.19** *55.6*	**2.98** *75.7*	-
5EFM4C	**3.04** *77.2*	-	**1.14** *29.0*	**2.92** *74.2*	**2.19** *55.6*	**2.97** *74.4*	-
5EHM4S 5EFM4S	**4.65** *118.1*	**4.1** *104.1*	**1.14** *29.0*	**3.7** *94.0*	**2.19** *55.6*	**3.76** *95.5*	-
5EFM4SC	**3.82** *97.0*	-	**1.14** *29.0*	**3.7** *94.0*	**2.19** *55.6*	**3.75** *95.3*	-

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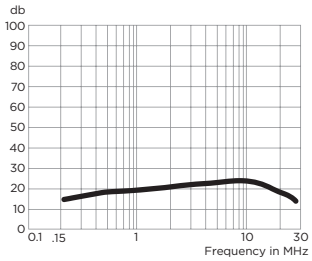
M Series

Performance Data

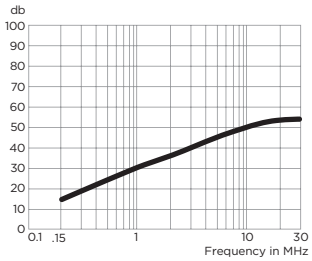
Typical Insertion Loss

Measured in closed 50 Ohm system

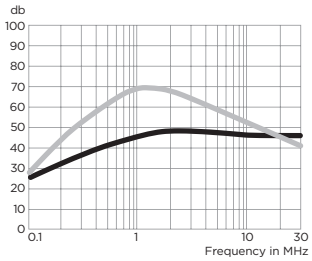
5EHM



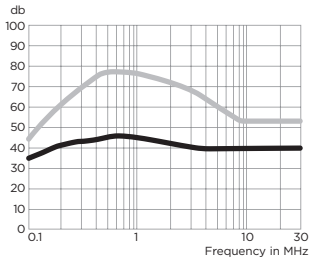
5EFM



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)

	Frequency – MHz							
Part No.	**.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)

	Frequency – MHz									
Part No.	**.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

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- *Приемлемые сроки поставки, возможна ускоренная поставка.*
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Email: org@lifeelectronics.ru

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