

Series M

Power Entry Modules Patent No. 4,488,201 with Optional RFI Power Line Filters for General and Medical Applications



UL Recognized
CSA Certified
VDE Approved



FM 4SC



VM



XM/ZM

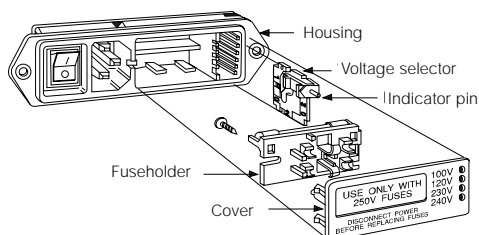
M Series

The M series power entry modules offer the most choices of power entry components and filtering options to fit a specific need. The fully configured M series expands the options of a manufacturer whose products are marketed worldwide. One component, fully assembled and tested, provides the capability of interfacing a multi-voltage power supply to any common voltage or fusing scheme in the world, without modification.

- The IEC connector provides an internationally accepted power entry termination, which can be used with a variety of line cords.
- The selectable fuseholder allows use of single or dual European fuses, or a single North American fuse.
- The optional DPST on/off switch breaks both sides of the line and is labeled with the international I/O markings.
- The optional voltage selector provides a convenient means to change transformer primary connection, and it is available in both 2-voltage and 4-voltage configurations.
- The series is available with four filter circuits to meet a variety of applications, and convenient connections are provided on unfiltered models to allow wiring of a separate RFI filter.

The M series is a family of components offering maximum flexibility and cost-effectiveness in the selection of primary power components. Wiring to the modules is accomplished via .110" terminals for labor savings and convenience.

The "C" suffix models of the M Series denote snap-in design for front mounting in panel thickness of .06 - .09.



Four filter circuits provide a choice of attenuation tailored to specific categories of susceptibility and emissions needs.

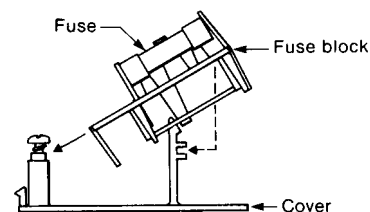
HM Models – This medical filter provides susceptibility protection without the leakage current associated with line-to-ground capacitors. Designed to allow equipment to meet UL544 for patient care and nonpatient care equipment, the HM filter has a maximum leakage current of 2 μ A at 120 VAC60 Hz. See Appendix C for more information on medical applications and UL standards.

FM Models – General purpose RFI filter designed for susceptibility applications, effectively providing RFI control of line-to-ground noise. The design is compact and meets the very low leakage current requirements of SEV and VDE portable equipment as well as (120 Volt) UL544 nonpatient medical equipment.

XM Models – High performance RFI filter designed to bring most digital equipment (including switching power supplies) into compliance with FCC Part 15J, Class B conducted emissions limits.

ZM Models – Premium RFI filter designed to bring most digital equipment (including switching power supplies) into compliance with EN55022, Level B (as well as FCC Part 15J, Class B) conducted emissions limits.

Fuse Block/Cover Assembly



To change from North American to European fusing: open cover, using small blade screwdriver or similar tool: loosen Phillips screw two turns; remove fuse block by sliding up, then away from Phillips screw and lifting up from pedestal; change fuses; (note that two European fuses are required, although a dummy fuse may be used in the neutral [lower] holder); invert fuse block and slide back onto Phillips screw and pedestal; tighten Phillips screw, and replace cover (note that fuse(s) that go into the housing first are the active set).

M Series

Unfiltered Models

Part Number	Current Rating @120VAC (Amps)	Current Rating @250VAC (Amps)	Available Voltage Selection Position*	DPST On/Off Switch	Mounting Style	Fuseholder Type
6VM1	6	6	1	-	Flange	Selectable
6VM1C	6	6	1	-	Snap-in	Selectable
6VM1S	6	4	1	•	Flange	Selectable
6VM1SC	6	4	1	•	Snap-in	Selectable
6VM2	6	6	2	-	Flange	Selectable
6VM2S	6	6	2	•	Flange	Selectable
6VM4	6	6	4	-	Flange	Selectable
6VM4C	6	6	4	-	Snap-in	Selectable
6VM4S	6	4	4	•	Flange	Selectable
6VM4SC	6	4	4	•	Snap-in	Selectable

* 1 - 120V/240V Fixed 2 - 120/240V Selectable 4 - 100V, 120V, 230V, 240V Selectable

• Includes DPST switch

Filtered Models

Part Number	RFI Filter Type	Current Rating @120VAC (Amps)	Current Rating @250VAC (Amps)	Available Voltage Selection Position	DPST On/Off Switch	Mounting Style	Fuseholder Type
5EHM1	Medical ¹	5	4	1	-	Flange	Selectable
5EHM1S	Medical ¹	5	4	1	•	Flange	Selectable
5EHM4	Medical ¹	5	4	4	-	Flange	Selectable
5EHM4S	Medical ¹	5	4	4	•	Flange	Selectable
5EFM1	General Purpose ²	5	4	1	-	Flange	Selectable
5EFM1C	General Purpose ²	5	4	1	-	Snap-in	Selectable
5EFM1S	General Purpose ²	5	4	1	•	Flange	Selectable
5EFM1SC	General Purpose ²	5	4	1	•	Snap-in	Selectable
5EFM4	General Purpose ²	5	4	4	-	Flange	Selectable
5EFM4C	General Purpose ²	5	4	4	-	Snap-in	Selectable
5EFM4S	General Purpose ²	5	4	4	•	Flange	Selectable
5EFM4SC	General Purpose ²	5	4	4	•	Snap-in	Selectable
3EXM1S	SMPS FCC-B ³	3	2	1	•	Flange	Selectable
3EXM4	SMPS FCC-B ³	3	2	4	-	Flange	Selectable
3EXM4S	SMPS FCC-B ³	3	2	4	•	Flange	Selectable
3EZM1S	SMPS EN55022-B ⁴	3	2	1	•	Flange	Selectable
3EZM4	SMPS EN55022-B ⁴	3	2	4	-	Flange	Selectable
3EZM4S	SMPS EN55022-B ⁴	3	2	4	•	Flange	Selectable

¹ Medical filter for very low leakage UL 544 health care applications.

Consult your local Corcom sales representative for pricing.

² General purpose filter for susceptibility applications.

³ Emissions filter for switching power supply applications where FCC-B level requirements must be met.

⁴ Emissions filter for switching power supply applications where EN55022-B level requirements must be met.

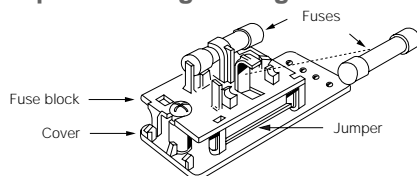
Refer to catalog page 83 for more information on available RFI filter types.

* 1 - 120V/240V Fixed 4 - 100V, 120V, 230V, 240V Selectable

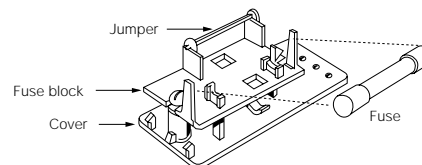
• Includes DPST switch

Fuse Changing

European Fusing Arrangement



North American Fusing Arrangement



Series M

Specifications – Unfiltered Models

Hipot rating (one minute):
 line-to-ground 1500 VAC
 line-to-line 1450 VDC
 line-to-load (switch off) 2500 VAC

Operating voltages: 100, 120, 230, 240 VAC

Operating frequency: 50/60 Hz

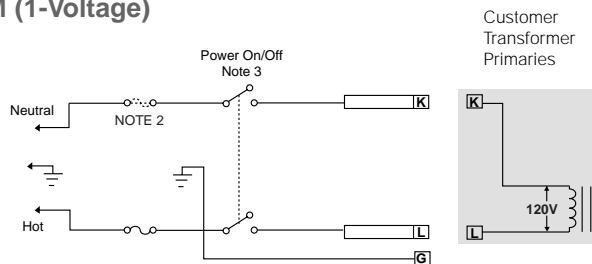
Switch:
 Double-insulated, rated for
 100,000 operations at full load;
 10,000 operations at 70 Amps inrush current.

Fuse (not included): Reversible fuseholder
 accepts one 1/4 x 1-1/4" fuse
 or two 5 x 20mm fuses.

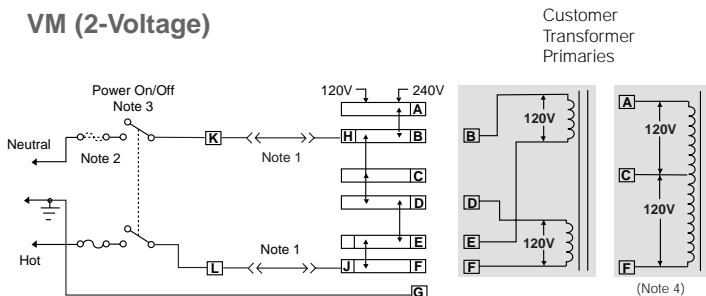
Terminals: .110" (2.79mm) terminals

Electrical Schematics – Unfiltered Models

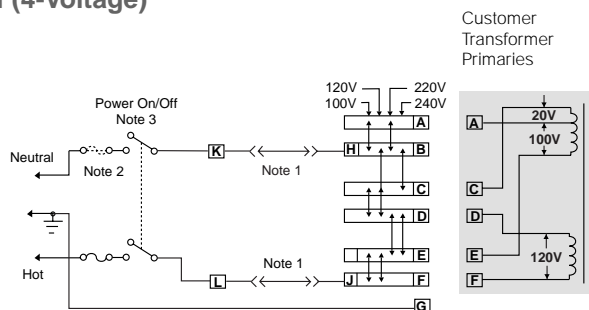
VM (1-Voltage)



VM (2-Voltage)



VM (4-Voltage)



Note 1: Jumpers required if no input filter is used.
 Note 2: Provision for dual European style fusing.
 Note 3: On/off switch present only with "S" suffix.
 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.

Specifications – Filtered Models

Maximum leakage current, each line-to-ground:
 @ 120 VAC 60 Hz: HM Models 2 μ A
 FM Models 0.25 mA
 XM/ZM Models 0.30 mA
 @ 250 VAC 50 Hz: HM Models 5 μ A
 FM/XM/ZM Models 0.50 mA

Hipot rating (one minute):
 line-to-ground HM Models 1500 VAC
 FM/XM/ZM 1500 VAC
 line-to-line All Models 1450 VDC

Operating voltages: 100, 120, 230, 240 VAC

Operating frequency: 50/60 Hz

Rated voltage: 120/250 VAC

Switch:
 Double-insulated, rated for
 100,000 operations at full load;
 10,000 operations at 70 Amps inrush current.

Fuse (not included): Reversible fuseholder
 accepts one 1/4 x 1-1/4" fuse
 or two 5 x 20 mm fuses.

Terminals: .110" (2.79mm) terminals

Minimum insertion loss in dB:

Line-to-ground in 50 ohm circuit:

Frequency MHz	HM 5A	FM 5A	XM 3A	ZM 3A
.01	-	-	2	15
.05	-	-	13	29
.15	14	14	23	39
.5	18	21	40	46
1	19	26	46	43
5	22	40	44	40
10	22	45	44	40
30	17	40	44	40

Line-to-line in 50 ohm circuit

Frequency MHz	XM 3A	ZM 3A
.02	-	5
.03	-	13
.05	-	28
.07	5	37
.15	34	55
.5	62	75
1	68	75
5	60	62
10	50	54
30	40	44

230V Nomenclature relates to pending European CENELEC agreement.



M Series

Case Dimensions – Unfiltered Models

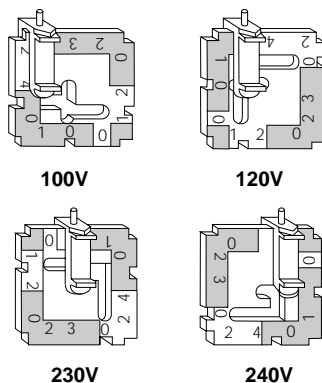
Metric shown in italics.

Part No.	A (max) ± 0.01 ± 0.25	B (max) ± 0.01 ± 0.25	C (max)	D (max)	E (max)	F (max)
6VM1	3.39 <i>86.1</i>	2.84 <i>72.1</i>	1.14 <i>29.0</i>	2.44 <i>62.0</i>	1.45 <i>36.8</i>	2.5 <i>63.5</i>
6VM1C	2.56 <i>66.1</i>	—	1.14 <i>29.0</i>	2.44 <i>62.0</i>	1.45 <i>36.8</i>	2.5 <i>63.2</i>
6VM1S	4.17 <i>105.9</i>	3.62 <i>91.9</i>	1.14 <i>29.0</i>	3.22 <i>81.8</i>	1.45 <i>36.8</i>	3.28 <i>83.3</i>
6VM1SC	3.34 <i>84.8</i>	—	1.14 <i>29.0</i>	3.27 <i>83.1</i>	1.45 <i>36.8</i>	3.27 <i>83.1</i>
6VM2	3.88 <i>98.6</i>	3.32 <i>84.3</i>	1.14 <i>29.0</i>	2.92 <i>74.2</i>	1.45 <i>36.8</i>	2.98 <i>75.7</i>
6VM4	3.04 <i>77.2</i>	—	1.14 <i>29.0</i>	2.92 <i>74.2</i>	1.45 <i>36.8</i>	2.97 <i>75.4</i>
6VM4C	3.04 <i>77.2</i>	—	1.14 <i>29.0</i>	2.92 <i>74.2</i>	1.45 <i>36.8</i>	2.97 <i>75.4</i>
6VM2S	4.65 <i>118.1</i>	4.1 <i>104.1</i>	1.14 <i>29.0</i>	3.72 <i>94.5</i>	1.45 <i>36.8</i>	3.76 <i>95.5</i>
6VM4S	3.82 <i>97.0</i>	—	1.14 <i>29.0</i>	3.7 <i>94.0</i>	1.45 <i>36.8</i>	3.75 <i>95.3</i>

Voltage Selection

To change selected voltage: open cover, using small blade screwdriver or similar tool; set aside cover/fuse block assembly; pull voltage selector card straight out of housing, using indicator pin; orient selector card so that desired voltage is readable at the bottom; 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); insert voltage selector card into housing, *printed side of card facing forward toward IEC connector and edge containing the desired voltage first*; replace cover, and verify that indicator pin shows the desired voltage.

Voltage Selector Card Orientation

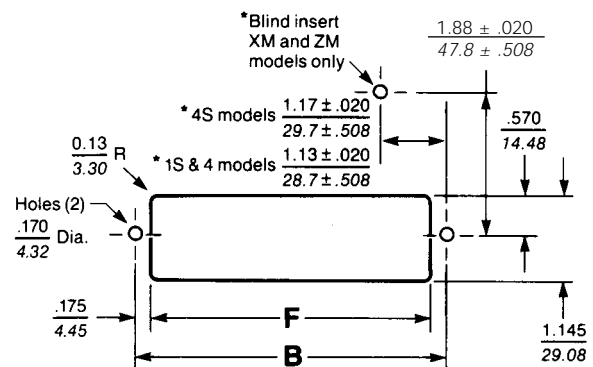


Case Dimensions – Filtered Models

Metric shown in italics.

Part No.	A (max) ± 0.01 ± 0.25	B (max) ± 0.01 ± 0.25	C (max)	D (max)	E (max)	F (max)	G
5EFM1	3.39 <i>86.1</i>	2.84 <i>72.1</i>	1.14 <i>29.0</i>	2.44 <i>62.0</i>	2.19 <i>55.6</i>	2.5 <i>63.5</i>	—
5EHM1	2.56 <i>65.0</i>	—	1.14 <i>29.0</i>	2.44 <i>62.0</i>	2.19 <i>55.6</i>	2.49 <i>63.2</i>	—
5EFM1C	4.17 <i>105.9</i>	3.62 <i>91.9</i>	1.14 <i>29.0</i>	3.22 <i>81.8</i>	2.19 <i>55.6</i>	3.28 <i>83.3</i>	—
5EHM1S	3.34 <i>84.8</i>	—	1.14 <i>29.0</i>	3.27 <i>83.1</i>	2.19 <i>55.6</i>	3.27 <i>83.1</i>	—
5EFM4	3.88 <i>98.6</i>	3.32 <i>84.3</i>	1.14 <i>29.0</i>	2.92 <i>74.2</i>	2.19 <i>55.6</i>	2.98 <i>75.7</i>	—
5EHM4	3.04 <i>77.2</i>	—	1.14 <i>29.0</i>	2.92 <i>74.2</i>	2.19 <i>55.6</i>	2.97 <i>75.4</i>	—
5EFM4C	4.65 <i>118.1</i>	4.1 <i>104.1</i>	1.14 <i>29.0</i>	3.7 <i>94.0</i>	2.19 <i>55.6</i>	3.76 <i>95.5</i>	—
5EHM4S	3.82 <i>97.0</i>	—	1.14 <i>29.0</i>	3.7 <i>94.0</i>	2.19 <i>55.6</i>	3.75 <i>95.3</i>	—
5EFM4SC	4.17 <i>105.9</i>	3.62 <i>91.9</i>	1.14 <i>29.0</i>	3.22 <i>81.8</i>	1.72 <i>43.7</i>	3.28 <i>83.8</i>	3.3 <i>83.8</i>
3EXM1S	3.88 <i>98.6</i>	3.32 <i>84.3</i>	1.14 <i>29.0</i>	2.92 <i>74.2</i>	1.72 <i>43.7</i>	2.98 <i>75.7</i>	2.99 <i>75.9</i>
3EZM1S	4.65 <i>118.1</i>	4.1 <i>104.1</i>	1.14 <i>29.0</i>	3.72 <i>94.5</i>	1.72 <i>43.7</i>	3.76 <i>95.5</i>	3.8 <i>96.5</i>
3EXM4S	3.82 <i>97.0</i>	—	1.14 <i>29.0</i>	3.7 <i>94.0</i>	1.72 <i>43.7</i>	3.76 <i>95.5</i>	3.8 <i>96.5</i>
3EZM4S	—	—	—	—	—	—	—

Recommended Panel Cutout



Note: Snap-in models allow front mount only.
XM and ZM models allow back mount only.
FM and HM models allow front or back mounting.

Accessories for M series include interconnection assembly, medical standoff bracket, voltage selector cards, and insulating shroud. See page 117.

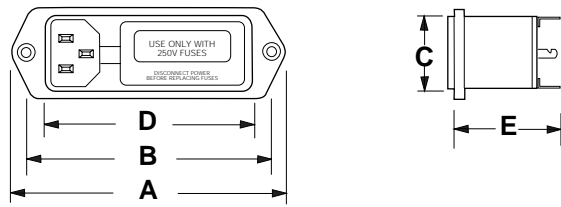
All mounting holes countersunk.

Case Styles – Unfiltered Models

Metric shown in italics.

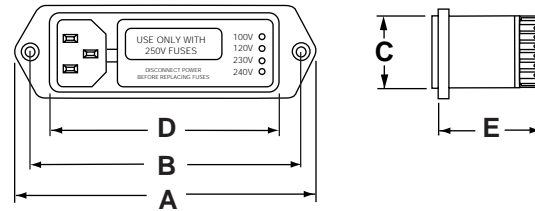
6VM1

IEC Connector, Selectable Fuseholder



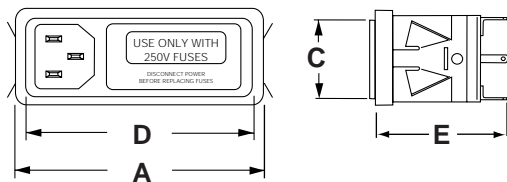
6VM2 & 6VM4

IEC Connector, Voltage Selector, Selectable Fuseholder



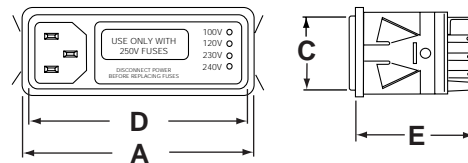
6VM1C

IEC Connector, Selectable Fuseholder, Snap-In



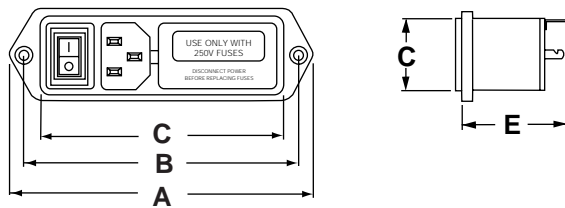
6VM4C

IEC Connector, Voltage Selector, Selectable Fuseholder, Snap-In



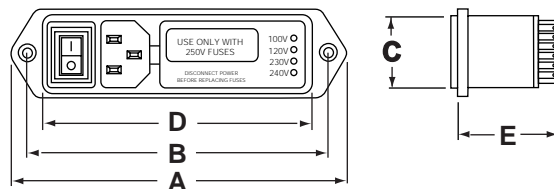
6VM1S

IEC Connector, DPST On/Off Switch, Selectable Fuseholder



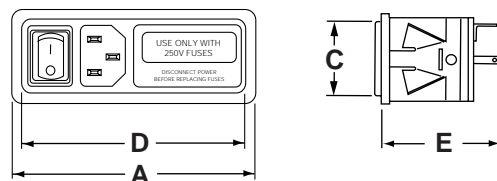
6VM2S & 6VM4S

IEC Connector, DPST On/Off Switch, Voltage Selector, Selectable Fuseholder



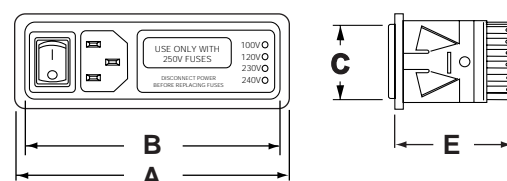
6VM1SC

IEC Connector, DPST On/Off Switch, Selectable Fuseholder, Snap-In

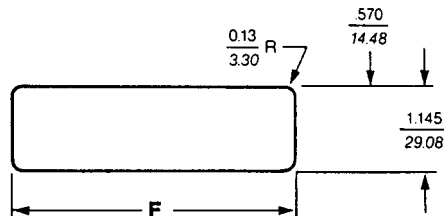


6VM4SC

IEC Connector, DPST On/Off Switch, Voltage Selector, Selectable Fuseholder, Snap-In



Recommended Panel Cutout Snap-In Only

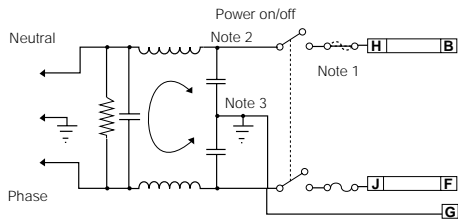


Mounting holes: $\frac{.155}{3.94}$ Dia.. (2)
with .279 Dia. x 82° Countersunk

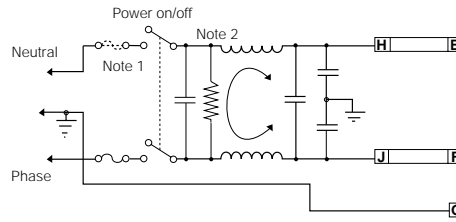
All mounting holes countersunk.

M Series

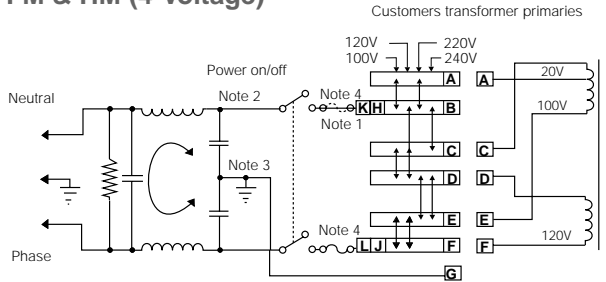
Electrical Schematics – Filtered Models FM & HM (1-Voltage)



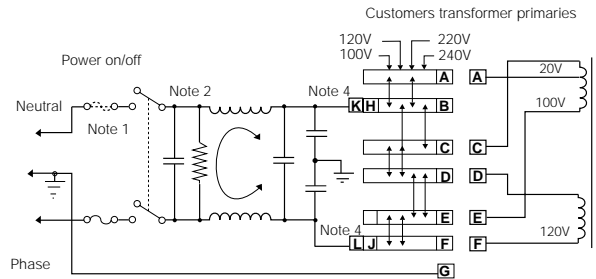
XM & ZM (1-Voltage)



FM & HM (4-Voltage)

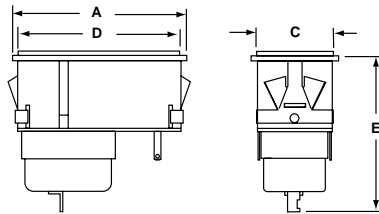
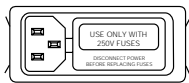


XM & ZM (4-Voltage)

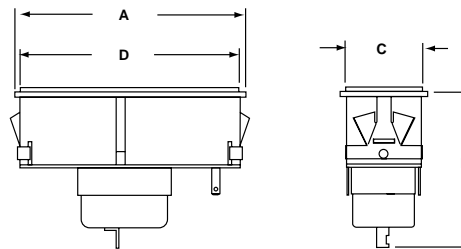
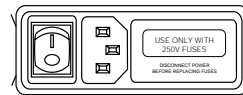


Case Styles – Filtered Snap-in Models 5EFM1C

IEC Connector, Selectable Fuseholder

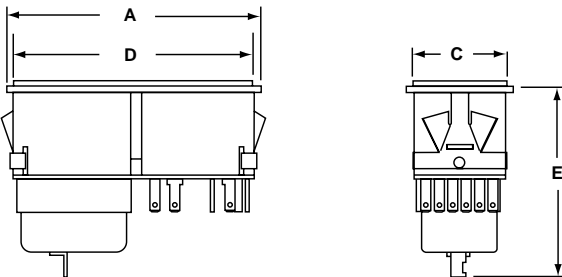
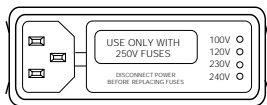


5EFM1SC IEC Connector, DPST On/Off Switch, Selectable Fuseholder



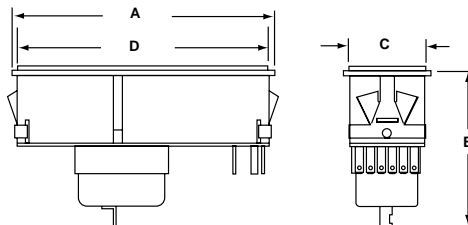
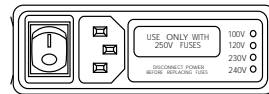
5EFM4C

IEC Connector, Voltage Selector, Selectable Fuseholder



5EFM4SC

IEC Connector, DPST On/Off Switch, Voltage Selector,
Selectable Fuseholder



Note 1: Provision for dual fusing (Euro standard)

Note 2: Power on/off switch with suffix "S" only

Note 3: HM models without line-to-ground capacitors

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.

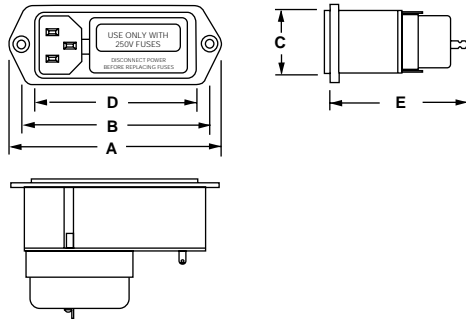
230V Nomenclature relates to pending European
CENELEC agreement.

Case Styles – Filtered Models

Metric shown in italics.

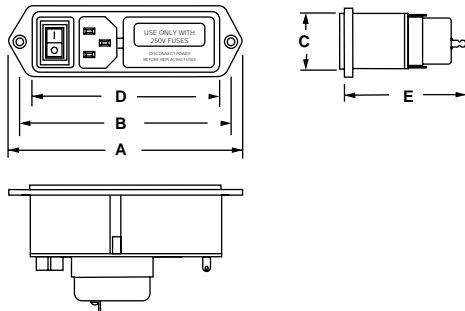
5EHM1 & 5EFM1

IEC Connector, Selectable Fuseholder



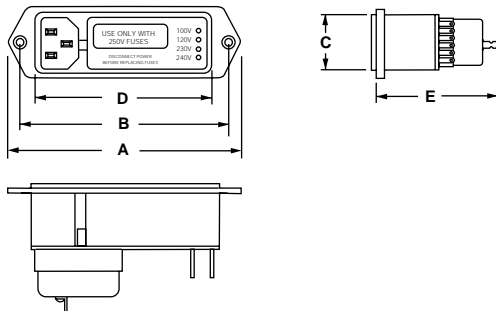
5EHM1S & 5EFM1S

IEC Connector, DPST On/Off Switch, Selectable Fuseholder



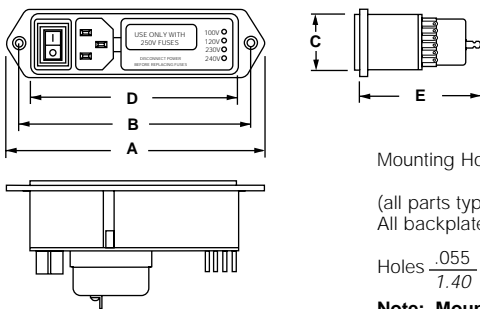
5EHM4 & 5EFM4

IEC Connector, DPST On/Off Switch, Selectable Fuseholder



5EHM4S & 5EFM4S

IEC Connector, DPST On/Off Switch, Voltage Selector, Selectable Fuseholder



Mounting Holes: $.155$ Dia.
 3.94

(all parts typical)
All backplate terminals: $.110$ terminals.
 2.79

Holes $.055$ Dia. $\pm .004$ except solder lug ground tab with wire wrap. Torque: 7 in. lbs. max.
 1.40 $\pm .10$

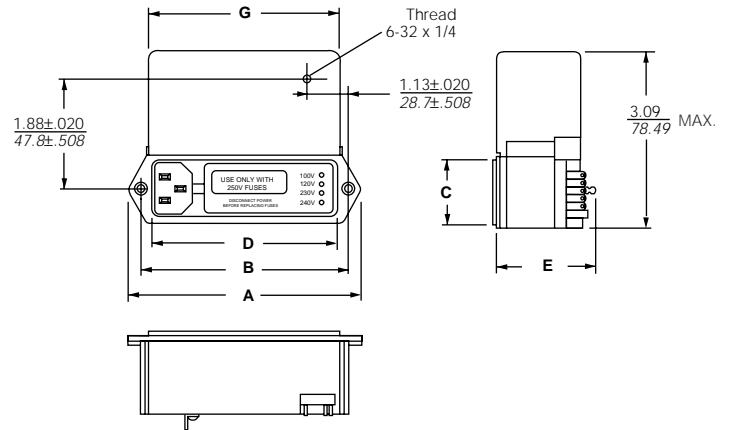
Note: Mounting holes on tabs are countersunk and take a #6 flat-head screw.

Case Styles – Filtered Models

Metric shown in italics.

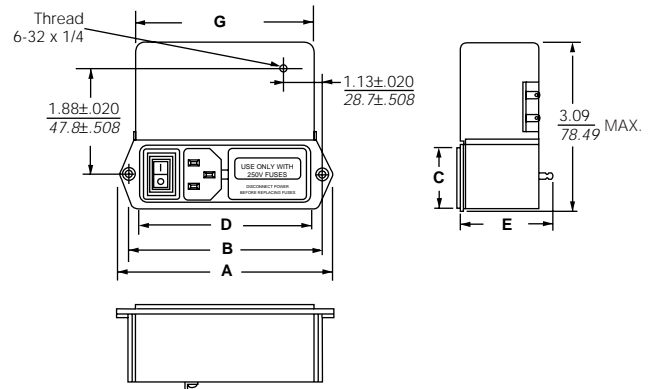
3EXM4 & 3EZM4

IEC Connector, Voltage Selector, Selectable Fuseholder



3EXM1S & 3EZM1S

IEC Connector, DPST On/Off Switch, Selectable Fuseholder



3EXM4S & 3EZM4S

IEC Connector, DPST On/Off Switch, Voltage Selector, Selectable Fuseholder

