

Cost-effective EMI Power Inlet Filter

EEA & EEB Series

Including the EAS/EBS and EAH/EBH Models



**UL Recognized
CSA Certified
VDE Approved**



EEA Series

- Compact single stage EMI filter with IEC 60320-1 C14 inlet
- Two element circuit provides basic attenuation
- Same performance as the EF Series
- Available in three terminal configurations
- Supersedes EF Series

EEB Series

- Compact EMI filter with IEC 60320-1 C14 inlet
- Two element circuit provides extended attenuation
- Extended differential mode performance
- Available in three terminal configurations

EAS & EBS Models

- Same performance as EEA and EEB Series
- Snap-in mounting
- Spade terminals

EAH & EBH Models

- Same size as EEA and EEB
- Minimal leakage current suitable for medical applications
- Flange mounted
- Spade terminals

Specifications

Maximum leakage current each Line to Ground:

| | <u>EEA/EEB</u> | <u>EAS/EBS</u> | <u>EAH/EBH</u> |
|------------------|----------------|----------------|----------------|
| @ 120 VAC 60 Hz: | .22 mA | | 2 μA |
| @ 250 VAC 50 Hz: | .38 mA | | 5 μA |

Hipot rating (one minute):

| | |
|-----------------|----------|
| Line to Ground: | 2250 VDC |
| Line to Line: | 1450 VDC |

Rated Voltage (max.):

250 VAC

Operating Frequency:

50/60 Hz

Rated Current:

1 to 10A

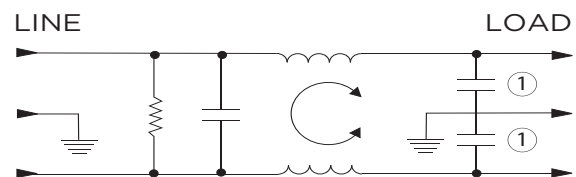
Operating Ambient Temperature Range

(at rated current I_r):

-10°C to +40°C

In an ambient temperature (T_a) higher than +40°C the maximum operating current (I_o) is calculated as follows: $I_o = I_r \sqrt{(85-T_a)/45}$

Electrical Schematic

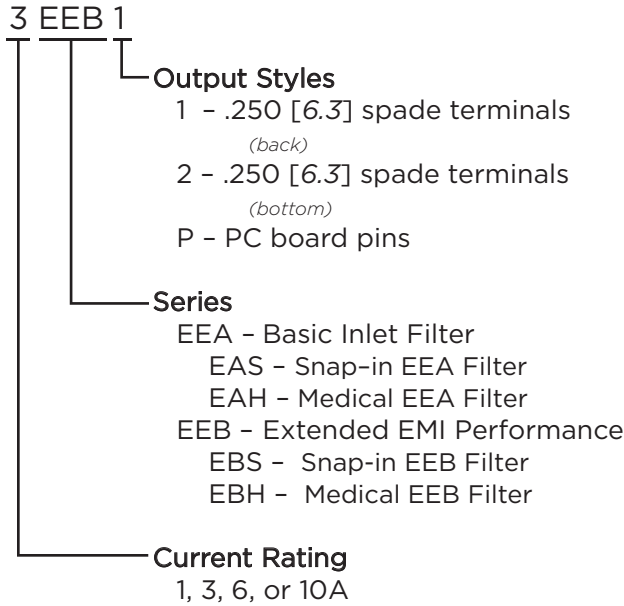


Note 1: Not present in EAH / EBH versions

Cost-effective EMI Power Inlet Filter *(continued)*

EEA & EEB Series

Ordering Information

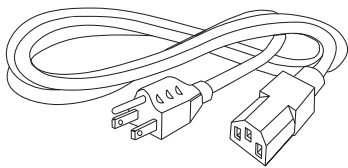


Available Part Numbers

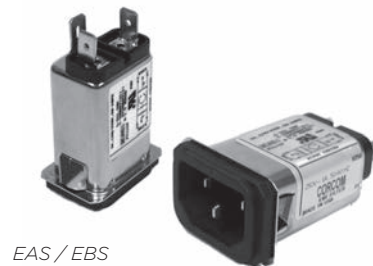
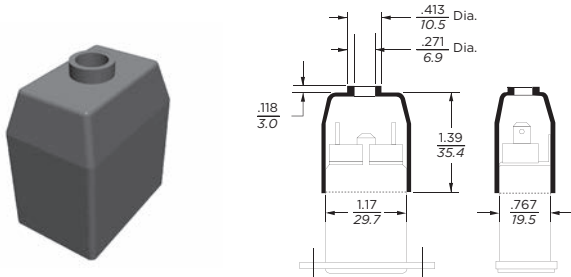
| EEA Models | EEB Models |
|------------|------------|
| 1EEA1 | 1EEB1 |
| 1EEA2 | 1EEB2 |
| 1EEAP | 1EEBP |
| 3EEA1 | 3EEB1 |
| 3EEA2 | 3EEB2 |
| 3EEAP | 3EEBP |
| 6EEA1 | 6EEB1 |
| 6EEA2 | 6EEB2 |
| 6EEAP | 6EEBP |
| 10EEA1 | 10EEB1 |
| 10EEA2 | 10EEB2 |
| 10EEAP | 10EEBP |
| EAS Models | EBS Models |
| 1EAS1 | 1EBS1 |
| 3EAS1 | 3EBS1 |
| 6EAS1 | 6EBS1 |
| 10EAS1 | 10EBS1 |
| EAH Models | EBH Models |
| 1EAH1 | 1EBH1 |
| 3EAH1 | 3EBH1 |
| 6EAH1 | 6EBH1 |
| 10EAH1 | 10EBH1 |

Accessories

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



FA601: Insulating Shroud

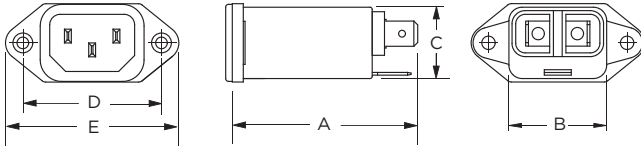


Cost-effective EMI Power Inlet Filter (continued)

EEA & EEB Series

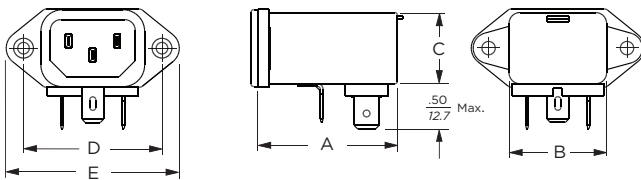
Case Styles

EEA1, EEB1, EAH1 & EBH1



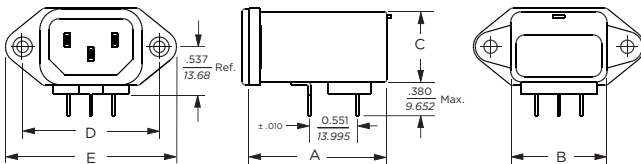
Typical Dimensions:
 Mounting holes (2): .132 [3.35] Dia. with .236 [5.99] Dia. x 90° countersink for #4 flathead screw IEC 60320-1 C14
 Line Inlet (1): IEC 60320-1 C14
 Load Terminals (2): .250 [6.3] with .07 [1.8] Dia. hole
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot

EEA2 & EEB2



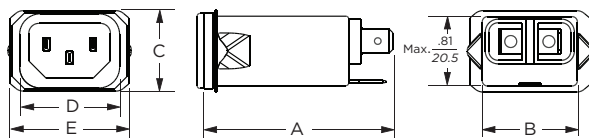
Typical Dimensions:
 Mounting holes (2): .132 [3.35] Dia. with .236 [5.99] Dia. x 90° countersink for #4 flathead screw IEC 60320-1 C14
 Line Inlet (1): IEC 60320-1 C14
 Load Terminals (2): .250 [6.3] with .07 [1.8] Dia. hole
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot

EEAP & EEBP



Typical Dimensions:
 Mounting holes (2): .132 [3.35] Dia. with .236 [5.99] Dia. x 90° countersink for #4 flathead screw IEC 60320-1 C14
 Line Inlet (1): IEC 60320-1 C14
 PC board pins (3): .031 [.07] square, ± .003 [.07]

EAS1 & EBS1



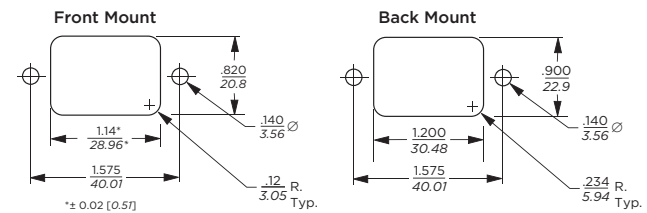
Typical Dimensions:
 Line Inlet (1): IEC 60320-1 C14
 Load Terminals (2): .250 [6.3] with .07 [1.8] Dia. hole
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot

Case Dimensions

| Part No. | A (max.) | B (max.) | C (max.) | D $\pm .010$ $\pm .25$ | E (max.) |
|------------------------|---------------|--------------|--------------|------------------------|---------------|
| EEA1, EEB1, EAH1, EBH1 | 2.15 54.6 | 1.12 28.4 | 0.81 20.6 | 1.575 40.01 | 1.98 50.3 |
| EEA2, EEB2 | 1.54 39.1 | 1.12 28.4 | 0.81 20.6 | 1.575 40.01 | 1.98 50.3 |
| EEAP, EEBP | 1.54 39.1 | 1.12 28.4 | 0.81 20.6 | 1.575 40.01 | 1.98 50.3 |
| EAS1, EBS1 | 2.20 55.88 | 1.15 29.2 | .96 24.38 | 1.185 30.10 | 1.41 35.81 |

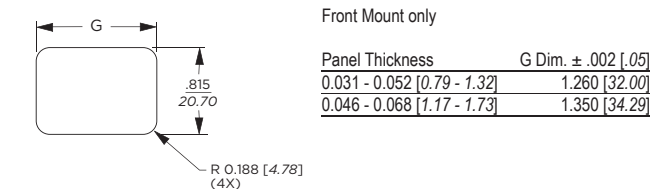
Recommended Panel Cutouts

EEA, EEB, EAH, EBH

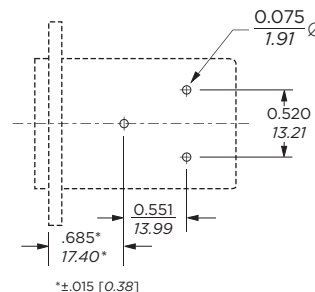


Tolerances ± .005 [0.13] unless otherwise noted
 Note 1: EEA1, EEB1, EAH1, EBH1 can be front or back mounted
 Note 2: EEA2, EEB2, EEAP and EEBP can be back mounted only

EAS, EBS



PC Board Layout



Cost-effective EMI Power Inlet Filter *(continued)*

EEA & EEB Series

Performance Data

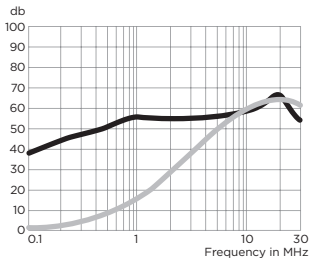
Typical Insertion Loss

Measured in closed 50 Ohm system

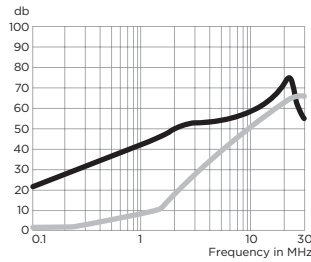
— Common Mode / Asymmetrical (L-G)
— Differential Mode / Symmetrical (L-L)

EEA, EAS Models

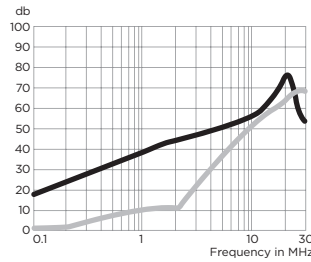
1A



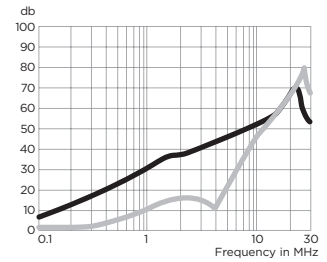
3A



6A

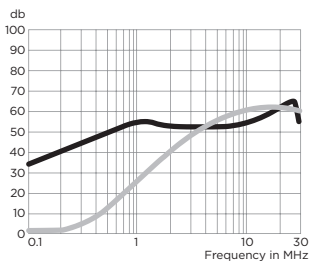


10A

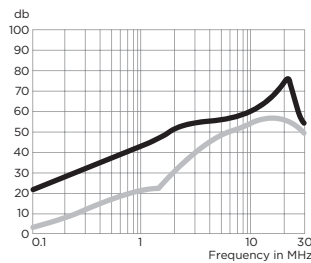


EEB, EBS Models

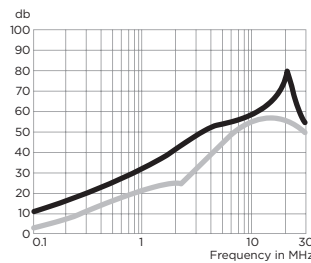
1A



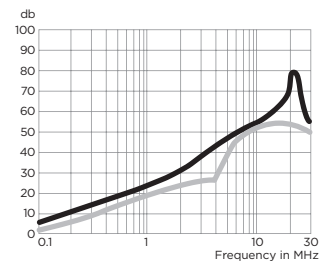
3A



6A

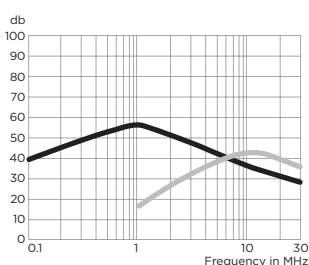


10A

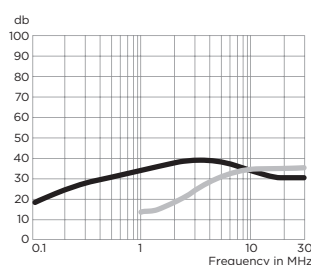


EAH Models

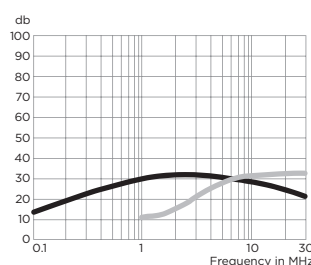
1A



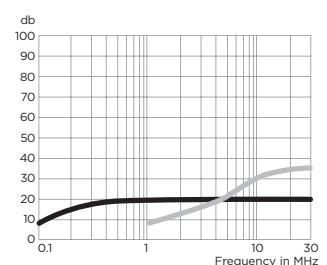
3A



6A

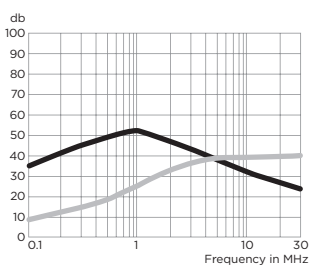


10A

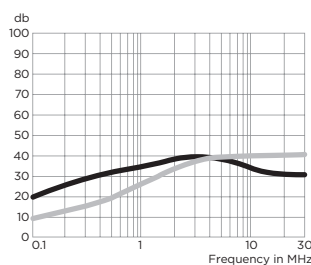


EBH Models

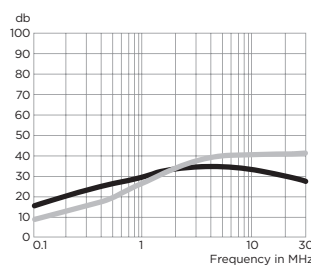
1A



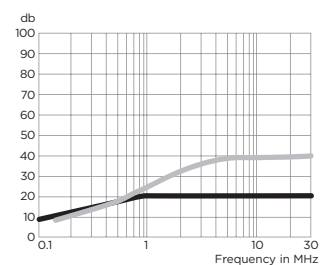
3A



6A



10A



Cost-effective EMI Power Inlet Filter *(continued)*

EEA & EEB Series

Performance Data *(continued)*

Minimum Insertion Loss

Measured in closed 50 Ohm system

Common Mode / Asymmetrical (Line to Ground)

| Current Rating | Frequency – MHz | | | | | | | | |
|-------------------------|-----------------|-----|----|-----|----|----|----|----|----|
| | .01 | .05 | .1 | .15 | .5 | 1 | 5 | 10 | 30 |
| EEA / EAS Models | | | | | | | | | |
| 1A | 12 | 23 | 29 | 32 | 41 | 47 | 47 | 47 | 40 |
| 3A | - | 10 | 15 | 19 | 30 | 36 | 48 | 50 | 47 |
| 6A | - | 1 | 4 | 10 | 22 | 28 | 42 | 48 | 47 |
| 10A | - | 1 | 3 | 5 | 14 | 20 | 32 | 38 | 47 |

EEB / EBS Models

| | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|
| 1A | 12 | 23 | 29 | 32 | 41 | 47 | 47 | 47 | 40 |
| 3A | - | 10 | 14 | 18 | 30 | 36 | 48 | 50 | 47 |
| 6A | - | 1 | 4 | 10 | 22 | 28 | 42 | 48 | 47 |
| 10A | - | 1 | 3 | 5 | 14 | 20 | 32 | 38 | 47 |

EAH Models

| | | | | | | | | | |
|-----|---|----|----|----|----|----|----|----|----|
| 1A | 8 | 21 | 29 | 32 | 42 | 45 | 32 | 30 | 19 |
| 3A | - | 5 | 10 | 15 | 25 | 27 | 30 | 27 | 22 |
| 6A | - | - | 5 | 6 | 19 | 21 | 24 | 20 | 15 |
| 10A | - | - | 1 | 5 | 9 | 12 | 12 | 12 | 12 |

EBH Models

| | | | | | | | | | |
|-----|---|----|----|----|----|----|----|----|----|
| 1A | 8 | 21 | 29 | 32 | 42 | 45 | 32 | 25 | 19 |
| 3A | - | 5 | 10 | 15 | 25 | 27 | 30 | 27 | 22 |
| 6A | - | - | 5 | 8 | 17 | 20 | 24 | 23 | 18 |
| 10A | - | - | - | 3 | 8 | 12 | 12 | 12 | 12 |

Differential Mode / Symmetrical (Line to Line)

| Current Rating | Frequency – MHz | | | | | | | |
|-------------------------|-----------------|---|-----|----|----|----|----|--|
| | .5 | 1 | 1.5 | 3 | 5 | 10 | 30 | |
| EEA / EAS Models | | | | | | | | |
| 1A | 1 | 9 | 19 | 32 | 42 | 45 | 40 | |
| 3A | 2 | 4 | 6 | 20 | 35 | 45 | 40 | |
| 6A | 2 | 4 | 6 | 6 | 24 | 40 | 40 | |
| 10A | 1 | 4 | 5 | 5 | 5 | 30 | 40 | |

EEB / EBS Models

| Current Rating | Frequency – MHz | | | | | | | |
|----------------|-----------------|-----|----|----|----|----|----|----|
| | .01 | .15 | .5 | 1 | 3 | 5 | 10 | 30 |
| 1A | 1 | 3 | 14 | 23 | 41 | 47 | 50 | 44 |
| 3A | 1 | 2 | 11 | 14 | 25 | 38 | 44 | 40 |
| 6A | 1 | 2 | 10 | 14 | 20 | 33 | 42 | 40 |
| 10A | 1 | 2 | 10 | 16 | 19 | 19 | 39 | 40 |

EAH Models

| Current Rating | Frequency – MHz | | | | |
|----------------|-----------------|-----|----|----|----|
| | 1 | 1.5 | 5 | 10 | 30 |
| 1A | 5 | 13 | 28 | 32 | 25 |
| 3A | 4 | 6 | 20 | 27 | 28 |
| 6A | 2 | 5 | 19 | 25 | 27 |
| 10A | 1 | 5 | 15 | 22 | 27 |

EBH Models

| Current Rating | Frequency – MHz | | | | |
|----------------|-----------------|----|----|----|----|
| | .15 | .5 | 1 | 10 | 30 |
| 1A | 1 | 10 | 18 | 30 | 31 |
| 3A | 1 | 10 | 18 | 30 | 31 |
| 6A | 1 | 10 | 18 | 30 | 31 |
| 10A | 1 | 10 | 18 | 30 | 31 |