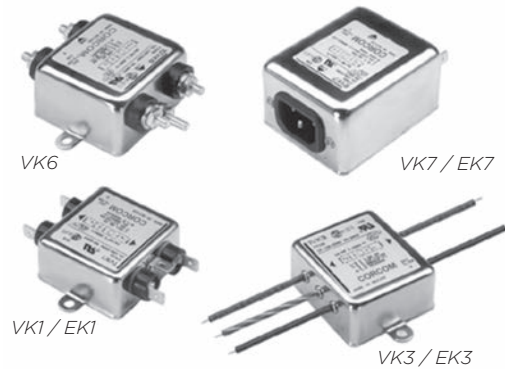


## General Purpose RFI Power Line Filters – Ideal for High Impedance Load

# K Series



UL Recognized  
CSA Certified  
VDE Approved\*\*



## K Series

- Suitable for high impedance loads
- Well suited to applications where pulsed, continuous and/or intermittent RFI interference is present
- EK models meet the very low leakage current requirements for VDE portable equipment and non-patient care medical equipment
- Available with ground line inductor (choke)

## Ordering Information

10 E K 7 M

### Suffix

- M – Metric inserts (*style 7 only*)
- Omit for standard or none
- C – Ground choke (*30, 40VK6 only*)

### Input / Output Style

- 1 – .250 [6.3] spade terminals
- 3 – Wire leads
- 6 – Threaded bolt
- 7 – IEC inlet\* (*line side*)
- .250 [6.3] spade terminals (*load side*)

### K Series

### Leakage current designation

- E – Low leakage (*<0.5 mA*)
- V – Standard

### Current Rating

- 1, 2, 3, 5, 10, 20, 30, 40 or 60A

\*1-15A: IEC 60320-1 C14 inlet mates with C13 connector  
20VK7: C20 inlet mates with C19 connector

## Specifications

### Maximum leakage current each Line to Ground:

|                  | VK Models | EK Models |
|------------------|-----------|-----------|
| @ 120 VAC 60 Hz: | .5 mA     | .21 mA    |
| @ 250 VAC 50 Hz: | 1.0 mA    | .36 mA    |

### 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 60A\*

### 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:  $I_o = I_r \sqrt{(85-T_a)/45}$

## Available Part Numbers

|       |        |        |
|-------|--------|--------|
| 1VK1  | 10VK6  | 2EK3   |
| 1VK3  | 10VK7  | 3EK1   |
| 2VK1  | 10VK7M | 3EK3   |
| 2VK3  | 20VK1  | 3EK7   |
| 3VK1  | 20VK6  | 3EK7M  |
| 3VK3  | 20VK7* | 5EK1   |
| 3VK7  | 30VK6  | 5EK3   |
| 3VK7M | 30VK6C | 5EK7   |
| 5VK1  | 40VK6  | 5EK7M  |
| 5VK3  | 40VK6C | 10EK1  |
| 5VK7  | 60VK6  | 10EK3  |
| 5VK7M | 1EK1   | 10EK7  |
| 10VK1 | 1EK3   | 10EK7M |
| 10VK3 | 2EK1   | 20EK1  |

\*\*20VK7, 20A model tested by Underwriters Laboratories to US and Canadian requirements and is VDE approved at 16A, 250VAC

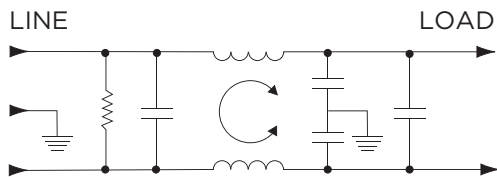
1

RFI Power Line Filters

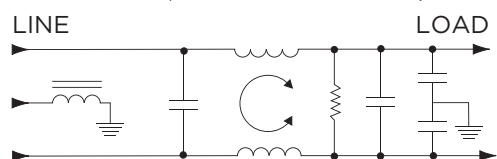
General Purpose RFI Power Line Filters (continued)

# K Series

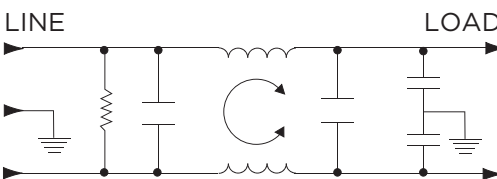
## Electrical Schematics



### 30 & 40VK6C (Inductor in Ground Line)

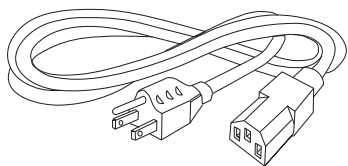


### 60VK6



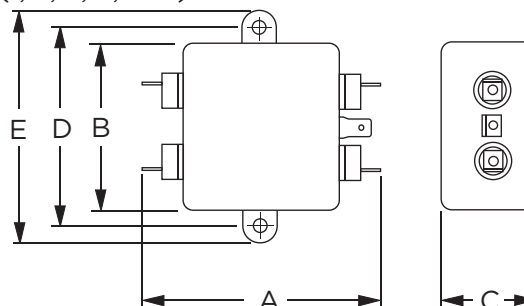
## Accessories

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



## Case Styles

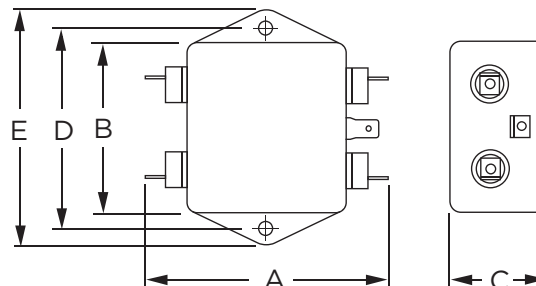
### K1 (1, 2, 3, 6, 10A)



Typical Dimensions:

Line/Load Terminals (4): .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  
Mounting Holes (2): .188 [4.78] Dia.

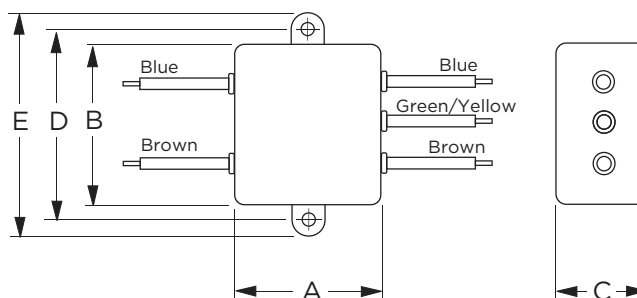
### K1 (20A)



Typical Dimensions:

Line/Load Terminals (4): .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  
Mounting Holes (2): .188 [4.78] Dia.

### K3



Typical Dimensions:

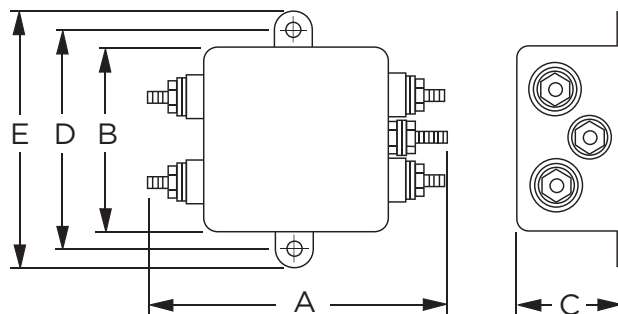
Wire Leads (5): 4.0 [101.6] Min., AWG18 (AWG16 for 10A)  
Mounting Holes (2): .188 [4.78] Dia.

General Purpose RFI Power Line Filters (continued)

# K Series

## Case Styles (continued)

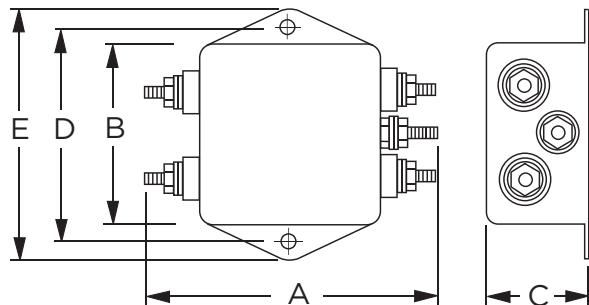
### 10VK6



Typical Dimensions:

Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max.  $\pm 2$  [.22]  
Mounting Holes (2): .188 [4.78] Dia.

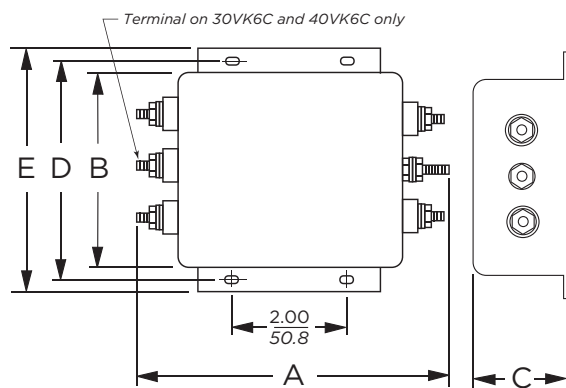
### 20VK6



Typical Dimensions:

Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max.  $\pm 2$  [.22]  
Mounting Holes (2): .188 [4.78] Dia.

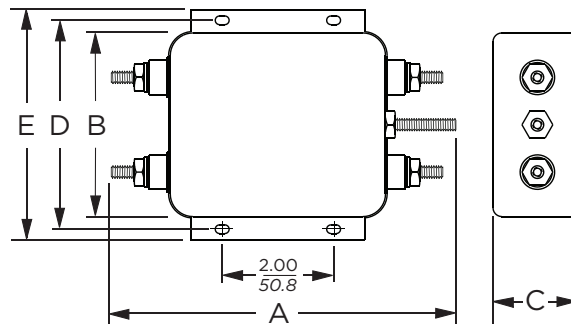
### 30VK6/6C & 40VK6/6C



Typical Dimensions:

Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max.  $\pm 2$  [.22]  
Mounting Slots (4): .250 x .156 [6.35 x 3.96] Dia.

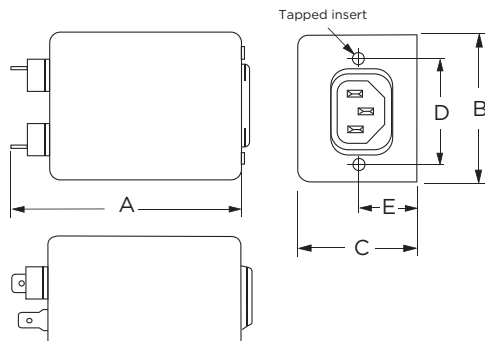
### 60VK6



Typical Dimensions:

Terminals (5): 1/4-20, Torque 56 lbf-in. [6.32 N-m] max.  $\pm 2$  [.22]  
Mounting Slots (4): .250 x .156 [6.35 x 3.96] Dia.

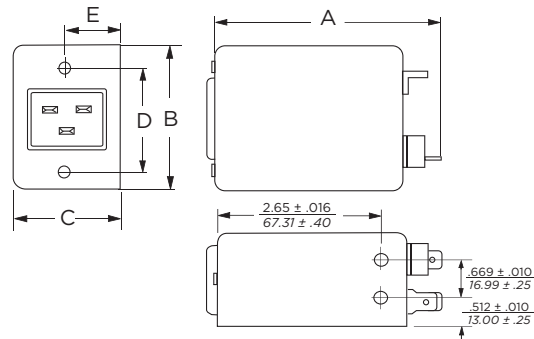
### K7 & K7M (3, 5, 10A)



Typical Dimensions:

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  
Line Inlet (1): IEC 60320-1 C14  
K7 Tapped Inserts (2): 6-32 x 1/4  
K7M Tapped Inserts (2): M3 x .5

### 20VK7



Typical Dimensions:

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  
Line Inlet (1): IEC 60320-1 C20  
K7 Tapped Inserts (2): 6-32 x 1/4  
K7M Tapped Inserts (2): M3 x .5

## General Purpose RFI Power Line Filters (continued)

# K Series

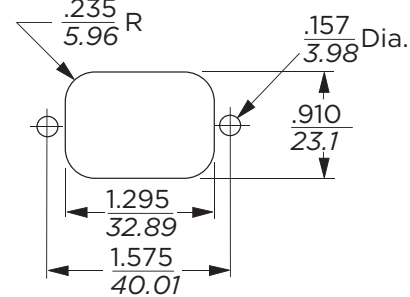
## Case Dimensions

| Part No.    | A<br>(max) | B<br>(max) | C<br>(max) | D<br>$\pm .015$<br>$\pm .38$ | E<br>(max) |
|-------------|------------|------------|------------|------------------------------|------------|
| 1VK1, 1EK1, | 3.1        | 2.07       | 0.91       | 2.375                        | 2.81       |
| 2VK1, 2EK1  | 78.7       | 52.6       | 23.1       | 60.33                        | 74.1       |
| 1VK3, 1EK3, | 1.81       | 2.07       | 0.91       | 2.375                        | 2.81       |
| 2VK3, 2EK3  | 46.0       | 52.6       | 23.1       | 60.33                        | 74.1       |
| 3VK1, 3EK1, | 3.10       | 2.07       | 1.16       | 2.375                        | 2.81       |
| 5VK1, 5EK1  | 78.7       | 52.6       | 29.5       | 60.33                        | 74.1       |
| 3VK3, 3EK3, | 1.81       | 2.07       | 1.16       | 2.375                        | 2.81       |
| 5VK5, 5EK3  | 46.0       | 52.6       | 29.5       | 60.33                        | 74.4       |
| 3VK7/7M,    | 3.21       | 2.25       | 1.28       | 1.575                        | 0.63*      |
| 3EK7/7M     | 81.5       | 57.2       | 32.5       | 40.01                        | 16.0*      |
| 5VK7/7M,    | 3.21       | 2.25       | 1.28       | 1.575                        | 0.63*      |
| 5EK7/7M     | 81.5       | 57.2       | 32.5       | 40.01                        | 16.0*      |
| 10VK1,      | 3.35       | 2.07       | 1.16       | 2.375                        | 2.81       |
| 10EK1       | 85.1       | 52.6       | 29.5       | 60.33                        | 71.4       |
| 10VK3,      | 2.07       | 2.07       | 1.16       | 2.375                        | 2.81       |
| 10EK3       | 52.6       | 52.6       | 29.5       | 60.33                        | 71.4       |
| 10VK6       | 3.46       | 2.07       | 1.16       | 2.375                        | 2.81       |
|             | 87.9       | 52.6       | 29.5       | 60.33                        | 71.4       |
| 10VK7/7M,   | 3.71       | 2.25       | 1.28       | 1.575                        | 0.63*      |
| 10EK7/7M    | 94.2       | 57.2       | 32.5       | 40.01                        | 16.0*      |
| 20VK1,      | 3.35       | 2.56       | 1.53       | 2.938                        | 3.35       |
| 20EK1       | 85.1       | 65.0       | 38.9       | 74.63                        | 85.1       |
| 20VK6       | 3.46       | 2.56       | 1.53       | 2.938                        | 3.35       |
|             | 87.9       | 65.0       | 38.9       | 74.63                        | 85.1       |
| 20VK7       | 3.8        | 2.28       | 1.78       | 1.575                        | .846*      |
|             | 90.4       | 54.6       | 39.6       | 74.63                        | 85.8*      |
| 30VK6,      | 5.34       | 3.38       | 1.53       | 3.75                         | 4.20       |
| 30VK6C      | 135.6      | 85.9       | 38.9       | 95.25                        | 106.7      |
| 40VK6,      | 5.34       | 3.38       | 1.53       | 3.75                         | 4.20       |
| 40VK6C      | 135.6      | 85.9       | 38.9       | 95.25                        | 106.7      |
| 60VK6       | 6.0        | 3.38       | 1.53       | 3.75                         | 4.20       |
|             | 152.4      | 85.9       | 38.9       | 95.25                        | 106.7      |

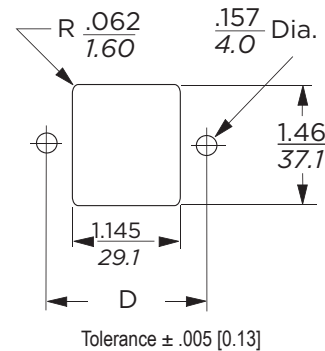
\*±0.02 [0.5]  
\*±0.01 [0.25]

## Recommended Panel Cutouts

### K7 & K7M Cutout (3, 5, 10A)



### 20VK7 Cutout

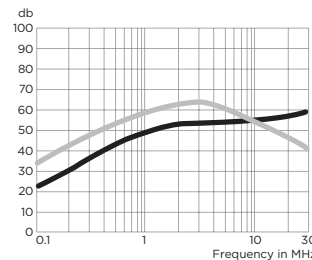


## Performance Data

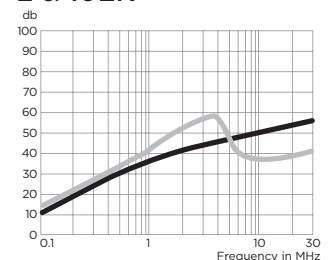
### Typical Insertion Loss

Measured in closed 50 Ohm system

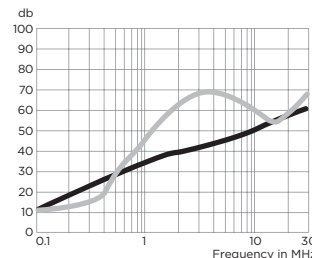
#### 1 & 3EK



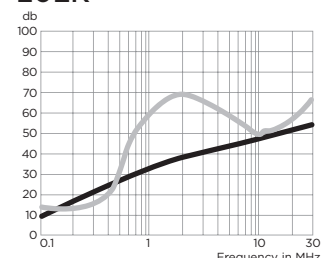
#### 2 & 10EK



#### 5EK



#### 20EK



General Purpose RFI Power Line Filters *(continued)*

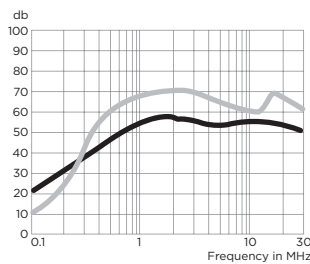
# K Series

## Performance Data *(continued)*

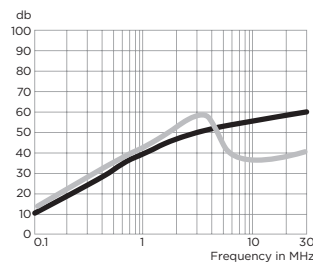
### Typical Insertion Loss

Measured in closed 50 Ohm system

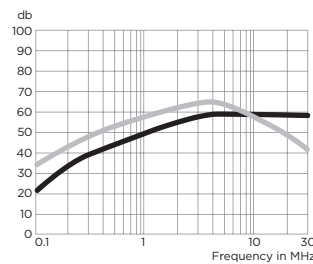
#### 1VK



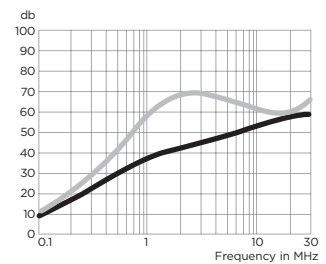
#### 2VK



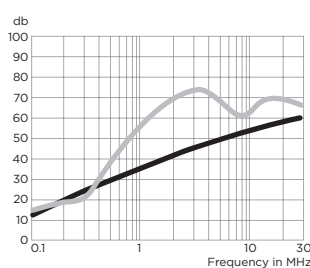
#### 3VK



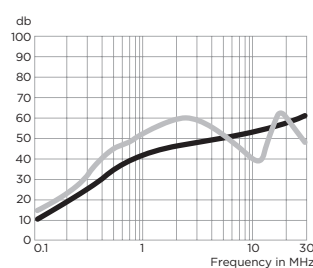
#### 5VK



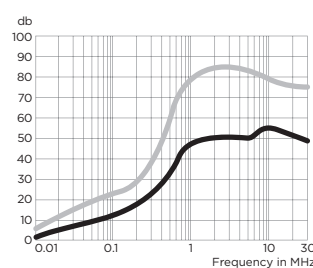
#### 10VK



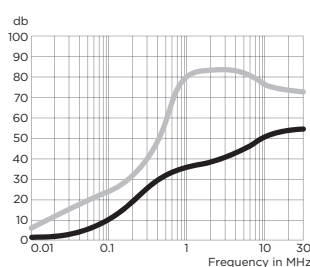
#### 20VK



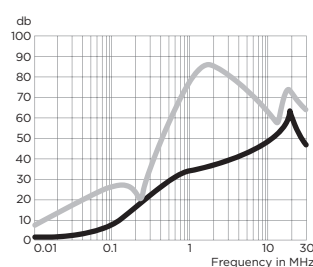
#### 30VK & 30VK6C



#### 40VK & 40VK6C



#### 60VK



— 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)

| Current Rating   | Frequency – MHz |    |    |    |    |    |
|------------------|-----------------|----|----|----|----|----|
|                  | .15             | .5 | 1  | 5  | 10 | 30 |
| <b>VK Models</b> |                 |    |    |    |    |    |
| 1A, 3A           | 15              | 30 | 38 | 50 | 50 | 50 |
| 2A, 5A, 10A      | 6               | 19 | 28 | 42 | 45 | 50 |
| 20A              | 6               | 19 | 28 | 42 | 45 | 50 |
| 30A, 40A         | 6               | 19 | 28 | 42 | 45 | 50 |
| 60A              | 6               | 22 | 28 | 32 | 39 | 35 |
| <b>EK Models</b> |                 |    |    |    |    |    |
| 1A, 3A           | 15              | 29 | 35 | 45 | 45 | 50 |
| 2A, 5A, 10A      | 8               | 19 | 25 | 38 | 40 | 45 |
| 20A              | 8               | 19 | 25 | 38 | 40 | 45 |

Differential Mode / Symmetrical (Line to Line)

| Current Rating   | Frequency – MHz |    |    |    |    |    |
|------------------|-----------------|----|----|----|----|----|
|                  | .15             | .5 | 1  | 5  | 10 | 30 |
| <b>VK Models</b> |                 |    |    |    |    |    |
| 1A, 3A           | -               | -  | 48 | 55 | 50 | 35 |
| 2A, 5A, 10A      | -               | -  | 30 | 50 | 30 | 30 |
| 20A              | 6               | 6  | 30 | 50 | 30 | 30 |
| 30A, 40A         | 2               | 40 | 60 | 65 | 57 | 55 |
| 60A              | 13              | 49 | 67 | 57 | 53 | 53 |
| <b>EK Models</b> |                 |    |    |    |    |    |
| 1A, 3A           | -               | -  | 48 | 55 | 50 | 35 |
| 2A, 5A, 10A      | -               | -  | 30 | 50 | 30 | 30 |
| 20A              | 6               | 6  | 30 | 50 | 30 | 30 |