

Multipurpose Power Line RFI Filter for Emission Control and High-Noise Industrial Environments

V and W Series



**UL Recognized
CSA Certified
VDE Approved**



VV1/VW1
3A, 6A, 10A

VV6/VW6
20A

V and W Series

The V series and W series filters will better protect equipment from malfunctions due to conducted interference coming into the equipment from the line, especially line-to-line noise and transients. They will also provide needed noise suppression to allow most equipment to meet FCC specifications for conducted emissions.

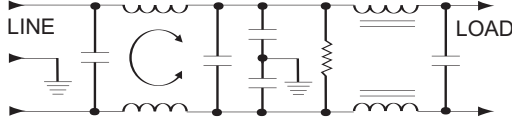
V Series – offers an N = 3 (“T”) line-to-ground impedance to common mode and an N = 5 (“Dbl. Pi”) impedance for line-to-line differential mode interference. The filters are designed for susceptibility use when equipment impedance at RF frequencies is low.

W Series – provides an N = 4 (“Dbl. L”) line-to-ground impedance for common mode and an N = 5 (“Dbl. Pi”) impedance for line-to-line differential mode interference. The filters are designed for use when equipment impedance at RF frequencies is high. The two-stage construction provides excellent suppression at high frequency.

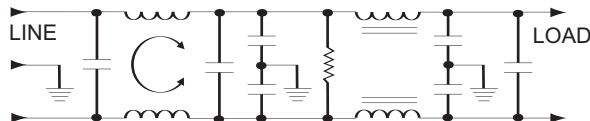
V series and W series filters are also effective to control emissions in equipment using SCR and T²L circuits, for compliance with FCC Part 15, Subpart J, and EN55022, Level A, down to 150kHz.

Electrical Schematics

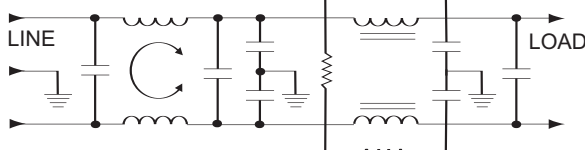
V Series



W Series 3A, 6A, 10A



W Series 20A



Resistor location for reference only.

Specifications

Maximum leakage current, each line-to-ground

| | |
|------------------|--------|
| @ 120 VAC 60 Hz: | 0.5 mA |
| @ 250 VAC 50 Hz: | .82 mA |

Hipot rating (one minute):

| | |
|----------------|----------|
| line-to-ground | 2250 VDC |
| line-to-line | 1450 VDC |

Operating frequency:

50/60 Hz

Rated voltage (max.):

250 VAC

Rated current:

| | |
|-----------|-----|
| 3VV/3VW | 3A |
| 6VV/6VW | 6A |
| 10VV/10VW | 10A |
| 20VV/20VW | 20A |

Minimum insertion loss in dB:

Line-to-ground in 50 ohm circuit

| Current Rating | Frequency—MHz | | | | | | | |
|-----------------|---------------|----|----|----|----|----|----|----|
| | .15 | .5 | 1 | 2 | 5 | 10 | 20 | 30 |
| V Series | | | | | | | | |
| 3A | 15 | 27 | 38 | 47 | 55 | 55 | 50 | 48 |
| 6A | 15 | 27 | 28 | 47 | 55 | 55 | 50 | 48 |
| 10A | 15 | 27 | 38 | 47 | 55 | 55 | 50 | 48 |
| 20A | 15 | 30 | 41 | 49 | 60 | 46 | 36 | 30 |
| W Series | | | | | | | | |
| 3A | 13 | 25 | 20 | 45 | 65 | 65 | 65 | 63 |
| 6A | 18 | 30 | 34 | 40 | 65 | 65 | 57 | 47 |
| 10A | 18 | 30 | 34 | 40 | 65 | 65 | 57 | 47 |
| 20A | 18 | 30 | 34 | 40 | 65 | 65 | 57 | 47 |

Line-to-line in 50 ohm circuit

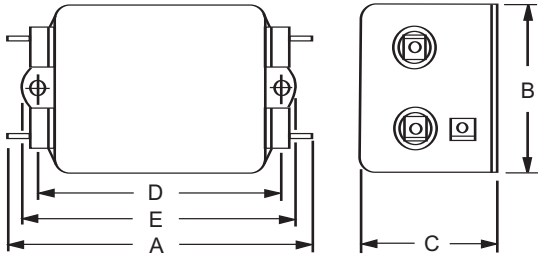
| Current Rating | Frequency—MHz | | | | | | | |
|-----------------|---------------|----|----|----|----|----|----|----|
| | .15 | .3 | .5 | 1 | 2 | 5 | 10 | 30 |
| V Series | | | | | | | | |
| 3A | 25 | 25 | 65 | 65 | 63 | 60 | 52 | 50 |
| 6A | 40 | 54 | 65 | 65 | 65 | 65 | 60 | 57 |
| 10A | 25 | 25 | 65 | 65 | 63 | 60 | 52 | 50 |
| 20A | 25 | 25 | 65 | 65 | 63 | 60 | 52 | 50 |
| W Series | | | | | | | | |
| 3A | 25 | 40 | 65 | 65 | 65 | 62 | 55 | 35 |
| 6A | 30 | 54 | 65 | 65 | 65 | 60 | 55 | 38 |
| 10A | 25 | 25 | 65 | 65 | 65 | 65 | 50 | 45 |
| 20A | 25 | 25 | 65 | 65 | 65 | 65 | 50 | 45 |

**Multipurpose Power Line RFI Filter for Emission Control
and High-Noise Industrial Environments (Continued)**

V and W Series

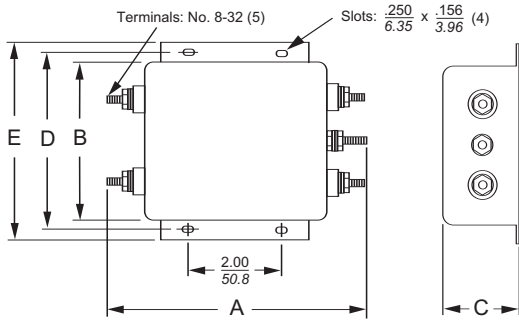
Case Styles

3A, 6A, 10A



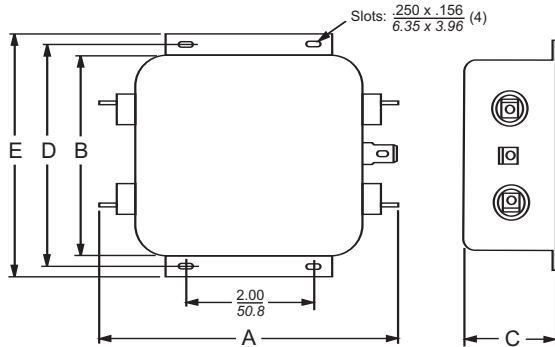
Typical dimensions:
Terminals: .250 [6.35] (5)
Slot: .07 x .16 [1.8 x 4.1]
Holes: .07 [1.8] Dia. (4)
Mounting holes: .188 [4.78] Dia. (2)

20VV6/20VW6



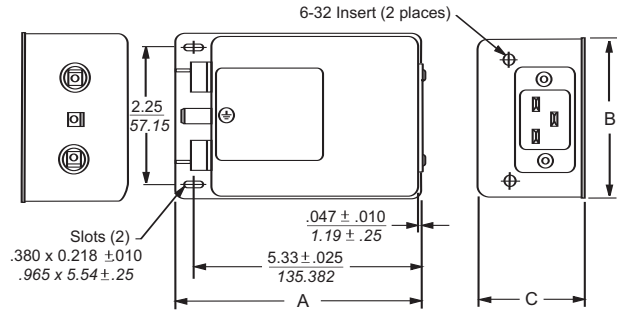
Torque: 18± 2 in.lb

20VV1/20VW1

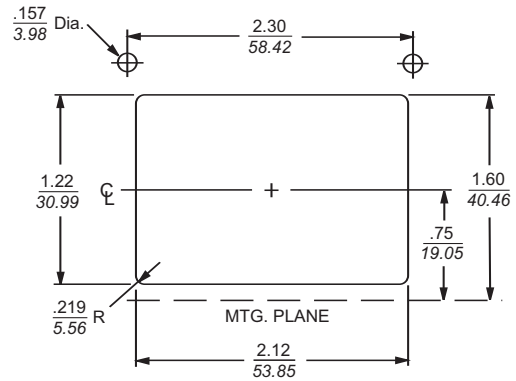


Typical dimensions:
Terminals: .250 [6.35] (5)
Slot: .07 x .16 [1.8 x 4.1]
Holes: .07 [1.8] Dia. (4)

20VW7



20VW7 Panel Cutout



Case Dimensions

| Part No. | A (max) | B (max) | C (max) | D $\pm .015$ $\pm .38$ | E (max) |
|--------------|-----------------------|----------------------|----------------------|------------------------------|----------------------|
| 3VV1, 3VW1 | 3.36 85.3 | 1.82 46.2 | 1.28 32.5 | 2.375 60.33 | 2.78 70.6 |
| 6VV1, 6VW1 | 3.86 98.0 | 2.08 52.8 | 1.53 38.9 | 2.938 74.63 | 3.34 84.8 |
| 10VV1, 10VW1 | 3.86 98.0 | 2.08 52.8 | 1.53 38.9 | 2.938 74.63 | 3.34 84.8 |
| 20VV1, 20VW1 | 5.23 132.8 | 3.38 85.9 | 1.53 38.9 | 3.750 95.25 | 4.20 106.7 |
| 20VV6, 20VW6 | 5.34 135.64 | 3.38 85.9 | 1.53 38.9 | 3.760 95.5 | 4.20 106.7 |
| 20VW7 | 5.65 143.51 | 3.12 79.25 | 2.29 58.17 | — | — |

Part Numbers

| V Series | W Series |
|----------|----------|
| 3VV1 | 3VW1 |
| 6VV1 | 6VW1 |
| 10VV1 | 10VW1 |
| 20VV1 | 20VW1 |
| 20VV6 | 20VW6 |
| | 20VW7* |

* UL, CSA — 20A; VDE — 16A