

710-730 Series Bolt Style Hermetic Filters

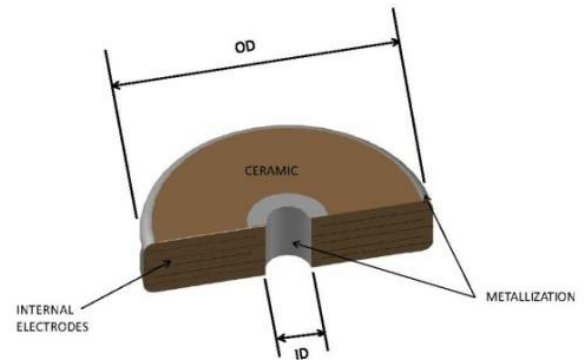


Instec Bolt Style Hermetic Filters are ideal for applications where high performance is critical and a threaded mounting technique is desired. A wide range of electrical characteristics provide effective solutions to many filtering applications. Filters are available in C, L1, L2, PI, T, and Double-T configurations and offer predictable insertion loss over the frequency range. With the more complex circuits, steeper cut offs can be obtained. These bolt style filters and matching hardware are silver plated for better conductivity and superior performance.



Features:

- Utilizes MLC discoidal capacitors, the heart of the filter
- Silver plated case and hardware offer excellent conductivity
- Infinite paths to ground within the capacitor allow for lowest impedance to ground available
- Full part number and date code marking, custom marking available on request
- Designed and can be tested to MIL-PRF-28861 requirements
- Rated to 15 Amps. Higher Current ratings available as non-hermetic designs
- Standard lug leads, others available on request
- 375 case (1/4-28 UNF-2A thread) and 690 case (5/16-24 UNF-2A thread)
- Custom configurations also available—contact factory



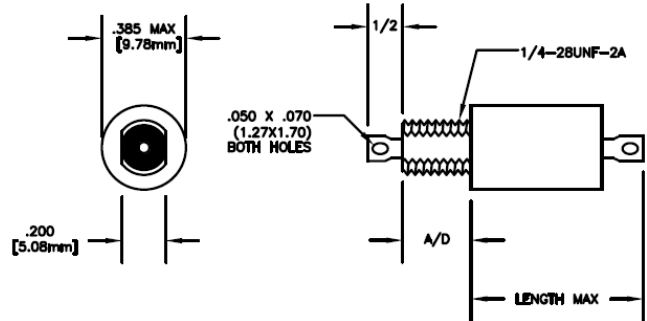
Applications:

- Secure Military Communications
- Power supplies
- Medical equipment
- Mining and oil exploration
- Signal lines

710-730 Series Bolt Style Hermetic Filters



710 Series .375" OD (1/4"-25 UNF-2A) Bolt Style Filters:



How to Order:

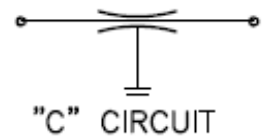
| | | | | | | | | |
|------------------------------|-------------|---|-----------------------|---------------------|-----------------------|----------------------|------------------------|--|
| <u>714</u> | -- | <u>503</u> | <u>B</u> | <u>P</u> | <u>A</u> | <u>B</u> | <u>2</u> | <u>**</u> |
| 710 = C-filter | placeholder | Capacitance code in PF, 1 st 2 digits are significant, 3 rd digit is number of zeros | Voltage rating | Length (Max) | Current rating | Thread length | Terminal length | Special requirements (to be assigned by the factory) |
| 711 = L1-filter | | P tolerance assumed unless specified | A =50VDC | A =0.793" | 1=1 AMP | A =0.187" | 1 =0.160" | |
| 712 = L2-filter | | | B =100VDC | B =0.761" | 2=2 AMP | D =0.312" | 2 =0.250" | |
| 713 = PI-filter | | | C =200VDC | C =0.770" | 3=3 AMP | | | |
| 714 = T-filter | | | D =300VDC | D =special | 4=4 AMP | | | |
| 715 = Double-T-filter | | | E =400VDC | | 5=5 AMP | | | |
| | | | J =500VDC | | A=10 AMP | | | |
| | | | | | B=15 AMP | | | |

Maximum Cap Values:

The below table gives the maximum cap values available and typical Insertion Loss performance by voltage rating:

710 Series .375" Bolt C-Filter

| Rated Voltage----> | <u>50V</u> | <u>100V</u> | <u>200V</u> | <u>300V</u> | <u>400V</u> | <u>500V</u> |
|---|------------|-------------|-------------|-------------|-------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 10 | 8 | 6 | 4.8 | 3 | 1.5 |
| Typical Insertion Loss (dB) | | | | | | |
| 30KHz | 30 | 29 | 26 | 25 | 21 | 15 |
| 150KHz | 45 | 43 | 41 | 39 | 35 | 28 |
| 300KHz | 51 | 49 | 47 | 45 | 41 | 35 |
| 1MHz | 61 | 59 | 57 | 55 | 51 | 45 |
| 10MHz | >70 | >70 | >70 | >70 | 69 | 63 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 |

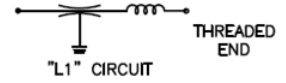


710-730 Series Bolt Style Hermetic Filters



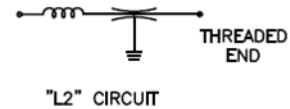
711 Series .375" Bolt L1-Filter

| Rated Voltage----> | <u>50V</u> | <u>100V</u> | <u>200V</u> | <u>300V</u> | <u>400V</u> | <u>500V</u> |
|---|------------|-------------|-------------|-------------|-------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 7 | 5 | 4 | 3.2 | 2 | 0.8 |
| Typical Insertion Loss (dB) | | | | | | |
| 30KHz | 28 | 25 | 24 | 21 | 17 | 9 |
| 150KHz | 42 | 39 | 37 | 35 | 31 | 23 |
| 300KHz | 48 | 45 | 43 | 41 | 37 | 29 |
| 1MHz | 58 | 55 | 54 | 51 | 45 | 39 |
| 10MHz | >70 | >70 | >70 | >70 | 65 | 58 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 |



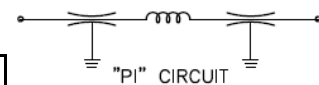
712 Series .375" Bolt L2-Filter

| Rated Voltage----> | <u>50V</u> | <u>100V</u> | <u>200V</u> | <u>300V</u> | <u>400V</u> | <u>500V</u> |
|---|------------|-------------|-------------|-------------|-------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 7 | 5 | 4 | 3.2 | 2 | 0.8 |
| Typical Insertion Loss (dB) | | | | | | |
| 30KHz | 28 | 25 | 24 | 21 | 17 | 9 |
| 150KHz | 42 | 39 | 37 | 35 | 31 | 23 |
| 300KHz | 48 | 45 | 43 | 41 | 37 | 29 |
| 1MHz | 58 | 55 | 54 | 51 | 45 | 39 |
| 10MHz | >70 | >70 | >70 | >70 | 65 | 58 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 |



713 Series .375" Bolt PI-Filter

| Rated Voltage----> | <u>50V</u> | <u>100V</u> | <u>200V</u> | <u>300V</u> | <u>400V</u> | <u>500V</u> |
|---|------------|-------------|-------------|-------------|-------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 7 | 5 | 4 | 3.2 | 2 | 0.8 |
| Typical Insertion Loss (dB) | | | | | | |
| 30KHz | 28 | 27 | 23 | 21 | 17 | 9 |
| 150KHz | 40 | 37 | 35 | 35 | 31 | 23 |
| 300KHz | 48 | 45 | 43 | 41 | 37 | 30 |
| 1MHz | 58 | 55 | 53 | 51 | 47 | 40 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | 51 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 |

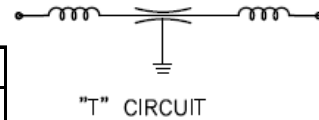


710-730 Series Bolt Style Hermetic Filters



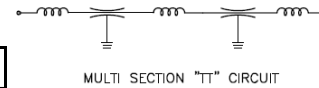
714 Series .375" Bolt T-Filter

| Rated Voltage----> | <u>50V</u> | <u>100V</u> | <u>200V</u> | <u>300V</u> | <u>400V</u> | <u>500V</u> |
|---|------------|-------------|-------------|-------------|-------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 7 | 5 | 4 | 3.2 | 2 | 0.8 |
| Typical Insertion Loss (dB) | | | | | | |
| 30KHz | 28 | 25 | 23 | 21 | 17 | 10 |
| 150KHz | 42 | 39 | 37 | 35 | 31 | 23 |
| 300KHz | 48 | 45 | 43 | 41 | 37 | 30 |
| 1MHz | 58 | 56 | 53 | 51 | 47 | 39 |
| 10MHz | >70 | >70 | >70 | >70 | 65 | 57 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 |



715 Series .375" Bolt Double-T-Filter

| Rated Voltage----> | <u>50V</u> | <u>100V</u> | <u>200V</u> | <u>300V</u> | <u>400V</u> | <u>500V</u> |
|---|------------|-------------|-------------|-------------|-------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 7 | 5 | 4 | 3.2 | 2 | 0.8 |
| Typical Insertion Loss (dB) | | | | | | |
| 30KHz | 30 | 27 | 25 | 23 | 20 | 11 |
| 150KHz | 44 | 41 | 39 | 37 | 33 | 25 |
| 300KHz | 50 | 47 | 45 | 43 | 39 | 30 |
| 1MHz | 57 | 55 | 55 | 53 | 48 | 41 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | 50 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 |



Typical Insertion Loss Performance of Common Filters:

| Instec P/N | Type | Cap Value (µF) | Voltage Rating | Insertion Loss (dB) | | | | | | |
|------------|-----------|----------------|----------------|---------------------|--------|--------|------|-------|--------|------|
| | | | | 30KHz | 150KHz | 300KHz | 1MHz | 10MHz | 100MHz | 1GHz |
| 710-105B | C-Filter | 1.0 | 100VDC | 13 | 27 | 33 | 43 | 62 | >70 | >70 |
| 710-133J | C-Filter | 0.013 | 500VDC | | | | 7 | 26 | 45 | 65 |
| 710-405B | C-Filter | 4.0 | 100VDC | 20 | 34 | 39 | 50 | 60 | >70 | >70 |
| 711-145B | L1-Filter | 1.4 | 100VDC | 15 | 28 | 33 | 44 | 60 | >70 | >70 |
| 712-255B | L2-Filter | 2.5 | 100VDC | 21 | 34 | 39 | 50 | 60 | >70 | >70 |
| 713-155A | PI-Filter | 1.5 | 50VDC | 15 | 28 | 34 | 40 | 52 | >70 | >70 |
| 713-605A | PI-Filter | 6.0 | 50VDC | 28 | 42 | 48 | 58 | >70 | >70 | >70 |
| 714-245B | T-Filter | 2.4 | 100VDC | | 11 | 18 | 33 | 70 | >70 | >70 |
| 714-254C | T-Filter | 0.25 | 200VDC | 21 | 34 | 40 | 50 | >70 | >70 | >70 |
| 715-205B | TT-Filter | 2.0 | 100VDC | 20 | 33 | 39 | 48 | >70 | >70 | >70 |

Instec Filters ♦ 7426A Tanner Parkway ♦ Arcade, NY 14009

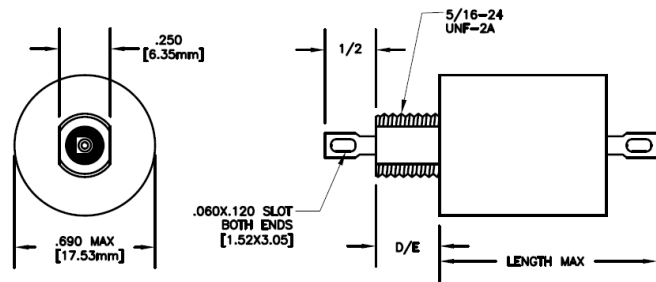
716.307.8542 ♦ FAX: 805.687.8085

www.instec-filters.com ♦ sales@instec-filters.com

710-730 Series Bolt Style Hermetic Filters



730 Series .690" OD (5/16"-24 UNF-2A) Bolt Style Filters:



How to Order:

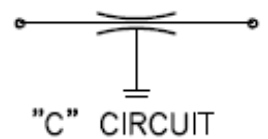
| | | | | | | | | |
|------------------------------|-------------|---|-----------------------|---------------------|-----------------------|----------------------|------------------------|--|
| 733 | -- | 503 | B | P | A | B | 2 | ** |
| 730 = C-filter | placeholder | Capacitance code in PF, 1 st 2 digits are significant, 3 rd digit is number of zeros | Voltage rating | Length (Max) | Current rating | Thread length | Terminal length | Special requirements (to be assigned by the factory) |
| 731 = L1-filter | | P tolerance assumed unless specified | A =50VDC | A =0.793" | 1=1 AMP | A =0.187" | 1=0.160" | |
| 732 = L2-filter | | | B =100VDC | B =0.761" | 2=2 AMP | D =0.312" | 2=0.250" | |
| 733 = PI-filter | | | C =200VDC | C =0.770" | 3=3 AMP | | | |
| 734 = T-filter | | | D =300VDC | D =special | 4=4 AMP | | | |
| 735 = Double-T-filter | | | E =400VDC | | 5=5 AMP | | | |
| | | | J =500VDC | | A=10 AMP | | | |
| | | | G =1000VDC | | B=15 AMP | | | |

Maximum Cap Values:

The below table gives the maximum cap values available and typical Insertion Loss performance by voltage rating:

730 series .690" Bolt C-Filter

| Rated Voltage---> | <u>50</u> | <u>100</u> | <u>200</u> | <u>300</u> | <u>400</u> | <u>500</u> | <u>1000</u> |
|---|------------|------------|------------|------------|------------|------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 35 | 30 | 24 | 18 | 12 | 11 | 4 |
| Typical Ins Loss | [Redacted] | | | | | | |
| 30KHz | 44 | 43 | 41 | 38 | 34 | 33 | 24 |
| 150KHz | 58 | 56 | 54 | 52 | 49 | 48 | 38 |
| 300KHz | 64 | 62 | 60 | 58 | 54 | 53 | 44 |
| 1MHz | >70 | >70 | 70 | 68 | 65 | 64 | 54 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |

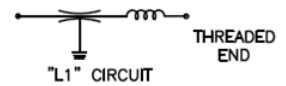


710-730 Series Bolt Style Hermetic Filters



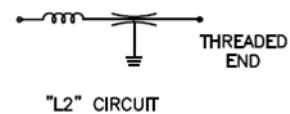
731 series .690" Bolt L1-Filter

| Rated Voltage---> | <u>50</u> | <u>100</u> | <u>200</u> | <u>300</u> | <u>400</u> | <u>500</u> | <u>1000</u> |
|---|-----------|------------|------------|------------|------------|------------|-------------|
| Max Capacitance (μF) P tolerance assumed | 24 | 20 | 15 | 12 | 8 | 7 | 2.5 |
| Typical Ins Loss | | | | | | | |
| 30KHz | 41 | 39 | 37 | 34 | 31 | 30 | 21 |
| 150KHz | 54 | 53 | 51 | 49 | 45 | 44 | 35 |
| 300KHz | 60 | 59 | 57 | 54 | 51 | 50 | 41 |
| 1MHz | 70 | 69 | 67 | 65 | 61 | 60 | 51 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | >70 | 70 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |



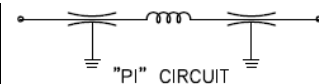
732 series .690" Bolt L2-Filter

| Rated Voltage---> | <u>50</u> | <u>100</u> | <u>200</u> | <u>300</u> | <u>400</u> | <u>500</u> | <u>1000</u> |
|---|-----------|------------|------------|------------|------------|------------|-------------|
| Max Capacitance (μF) P tolerance assumed | 24 | 20 | 15 | 12 | 8 | 7 | 2.5 |
| Typical Ins Loss | | | | | | | |
| 30KHz | 41 | 39 | 37 | 34 | 31 | 30 | 21 |
| 150KHz | 54 | 53 | 51 | 49 | 45 | 44 | 35 |
| 300KHz | 60 | 59 | 57 | 54 | 51 | 50 | 41 |
| 1MHz | 70 | 69 | 67 | 65 | 61 | 60 | 51 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | >70 | 70 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |



733 series .690" Bolt PI-Filter

| Rated Voltage---> | <u>50</u> | <u>100</u> | <u>200</u> | <u>300</u> | <u>400</u> | <u>500</u> | <u>1000</u> |
|---|-----------|------------|------------|------------|------------|------------|-------------|
| Max Capacitance (μF) P tolerance assumed | 24 | 20 | 15 | 12 | 8 | 7 | 2.5 |
| Typical Ins Loss | | | | | | | |
| 30KHz | 41 | 39 | 37 | 35 | 31 | 30 | 21 |
| 150KHz | 54 | 53 | 51 | 48 | 45 | 44 | 35 |
| 300KHz | 60 | 59 | 57 | 54 | 51 | 50 | 41 |
| 1MHz | 67 | 66 | 65 | 63 | 60 | 59 | 51 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |



710-730 Series Bolt Style Hermetic Filters



734 series .690" Bolt T-Filter

| Rated Voltage---> | <u>50</u> | <u>100</u> | <u>200</u> | <u>300</u> | <u>400</u> | <u>500</u> | <u>1000</u> |
|---|-----------|------------|------------|------------|------------|------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 24 | 20 | 15 | 12 | 8 | 7 | 2.5 |
| Typical Insertion Loss(dB) | | | | | | | |
| 30KHz | 41 | 39 | 37 | 34 | 31 | 30 | 21 |
| 150KHz | 54 | 53 | 51 | 49 | 45 | 44 | 35 |
| 300KHz | 60 | 59 | 57 | 54 | 51 | 50 | 41 |
| 1MHz | 70 | 69 | 67 | 65 | 61 | 60 | 51 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | >70 | 70 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |

735 series .690" Bolt Double-T-Filter

| Rated Voltage---> | <u>50</u> | <u>100</u> | <u>200</u> | <u>300</u> | <u>400</u> | <u>500</u> | <u>1000</u> |
|---|-----------|------------|------------|------------|------------|------------|-------------|
| Max Capacitance (µF) P tolerance assumed | 24 | 20 | 15 | 12 | 8 | 7 | 2.5 |
| Typical Insertion Loss(dB) | | | | | | | |
| 30KHz | 41 | 39 | 37 | 35 | 31 | 30 | 21 |
| 150KHz | 54 | 53 | 51 | 48 | 45 | 44 | 35 |
| 300KHz | 60 | 59 | 57 | 54 | 51 | 50 | 41 |
| 1MHz | 67 | 66 | 65 | 63 | 60 | 59 | 51 |
| 10MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 100MHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |
| 1GHz | >70 | >70 | >70 | >70 | >70 | >70 | >70 |

Typical Insertion Loss for common filters:

| Instec P/N | Type | Insertion Loss (dB) | | | | | | | |
|------------|-----------|---------------------|---------------|---------------|-------------|--------------|---------------|-------------|--|
| | | <u>30KHz</u> | <u>150KHz</u> | <u>300KHz</u> | <u>1MHz</u> | <u>10MHz</u> | <u>100MHz</u> | <u>1GHz</u> | |
| 730-605B | C-Filter | 29 | 42 | 49 | 58 | >70 | >70 | >70 | |
| 731-254C | L1-Filter | | 15 | 21 | 31 | 50 | 70 | >70 | |
| 731-754J | L1-Filter | 11 | 25 | 30 | 41 | 61 | >70 | >70 | |
| 732-364E | L2-Filter | 6 | 18 | 24 | 35 | 55 | >70 | >70 | |
| 733-285B | PI-Filter | 22 | 36 | 42 | 52 | >70 | >70 | >70 | |
| 734-154E | T-Filter | | 11 | 17 | 27 | 47 | 65 | >70 | |
| 735-254E | TT-Filter | 3 | 15 | 21 | 31 | 47 | >70 | >70 | |