EPCOS Product Brief 2016

# Power EMC Filters

## 2-Line Filters – IEC Inlet Filters

EPCOS IEC inlet filters combine an IEC inlet with an EMC filter in a space saving design. Three series of IEC inlet filters are available. The B84771 series contains just the inlet and the filter and is available with and without discharging resistor. The B84773 series also integrates a fuse holder and the B84776 offers a power switch in addition to the fuse holder.
The filters cover currents from 1 A to 20 A and have a rated voltage of 250 V AC/DC.
With the B84771 series customers can choose between tab connectors and litz wires on the load side. These IEC inlet filters offer either screw or snap-in mounting.

Medical versions of all types are available for applications with low leakage current requirements.

### Benefits

- Very compact dimensions
- Easy to install
- IEC connector according to IEC 60320-1
- Cost optimized construction
- Medical versions with reduced leakage current available
- ENEC, UL and cUL approved
- RoHS compatible

EPCOS

## B84771
2-line filters with IEC connector

### Characteristics and ordering codes

| $I_R$ A | $C_R$ X2 µF | $C_R$ Y2 pF | $L_R$ mH | $I_{LK}$[1] mA | $R_{dis}$ MΩ | Approx. weight g | Ordering code | Approvals | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Screw mounting versions with tab connectors 6.3 × 0.8 mm², $V_R$ = 250 V AC/DC** | | | | | | | | | | |
| 1 | 1 × 0.1 | 2 × 2200 | 2 × 12 | 0.173 | 1 | 40 | B84771A0001A000 | × | × | × |
| 1 | 1 × 0.1 | 2 × 2200 | 2 × 12 | 0.173 | – | 40 | B84771C0001A000 | × | × | × |
| 1 | 1 × 0.1 | – | 2 × 12 | 0 | 1 | 40 | B84771M0001A000 | × | × | × |
| 3 | 1 × 0.1 | 2 × 2200 | 2 × 2.5 | 0.173 | 1 | 40 | B84771A0003A000 | × | × | × |
| 3 | 1 × 0.1 | 2 × 2200 | 2 × 2.5 | 0.173 | – | 40 | B84771C0003A000 | × | × | × |
| 3 | 1 × 0.1 | – | 2 × 2.5 | 0 | 1 | 40 | B84771M0003A000 | × | × | × |
| 6 | 1 × 0.1 | 2 × 2200 | 2 × 0.84 | 0.173 | 1 | 40 | B84771A0006A000 | × | × | × |
| 6 | 1 × 0.1 | 2 × 2200 | 2 × 0.84 | 0.173 | – | 40 | B84771C0006A000 | × | × | × |
| 6 | 1 × 0.1 | – | 2 × 0.84 | 0 | 1 | 40 | B84771M0006A000 | × | × | × |
| 8 | 1 × 0.1 | 2 × 2200 | 2 × 0.45 | 0.173 | 1 | 40 | B84771A0008A000 | × | × | × |
| 8 | 1 × 0.1 | 2 × 2200 | 2 × 0.45 | 0.173 | – | 40 | B84771C0008A000 | × | × | × |
| 8 | 1 × 0.1 | – | 2 × 0.45 | 0 | 1 | 40 | B84771M0008A000 | × | × | × |
| 10 | 1 × 0.1 | 2 × 2200 | 2 × 0.24 | 0.173 | 1 | 40 | B84771A0010A000 | × | × | × |
| 10 | 1 × 0.1 | 2 × 2200 | 2 × 0.24 | 0.173 | – | 40 | B84771C0010A000 | × | × | × |
| 10 | 1 × 0.1 | – | 2 × 0.24 | 0 | 1 | 40 | B84771M0010A000 | × | × | × |
| 12 | 1 × 0.1 | 2 × 2200 | 2 × 0.14 | 0.173 | 1 | 40 | B84771A0012A000 | ×[2] | × | × |
| 12 | 1 × 0.1 | 2 × 2200 | 2 × 0.14 | 0.173 | – | 40 | B84771C0012A000 | ×[2] | × | × |
| 12 | 1 × 0.1 | – | 2 × 0.14 | 0 | 1 | 40 | B84771M0012A000 | ×[2] | × | × |
| 15 | 1 × 0.1 | 2 × 2200 | 2 × 0.09 | 0.173 | 1 | 40 | B84771A0015A000 | ×[2] | × | × |
| 15 | 1 × 0.1 | 2 × 2200 | 2 × 0.09 | 0.173 | – | 40 | B84771C0015A000 | ×[2] | × | × |
| 15 | 1 × 0.1 | – | 2 × 0.09 | 0 | 1 | 40 | B84771M0015A000 | ×[2] | × | × |
| 16 | 1 × 0.33 | 2 × 2200 | 2 × 0.4 | 0.173 | 1 | 130 | B84771A0016A000 | × | × | × |
| 16 | 1 × 0.33 | – | 2 × 0.4 | 0 | 1 | 130 | B84771M0016A000 | × | × | × |
| 20 | 1 × 0.33 | 2 × 2200 | 2 × 0.3 | 0.173 | 1 | 130 | B84771A0020A000 | ×[2] | × | × |
| 20 | 1 × 0.33 | – | 2 × 0.3 | 0 | 1 | 130 | B84771M0020A000 | ×[2] | × | × |

× = Approval granted

[1] Calculation according to IEC 60939-1, annex A, at rated voltage and 50 Hz. In practice are up to double values to be expected due to the insulation resistance values of the used ceramic capacitors. For the medical version results computationally the value 0. In practice are values 1 ... 2 mA to be expected due to the insulation resistance values of the used materials.

[2] ENEC approval at 12 A and 15 A types with 10 A, at 20 A type with 16 A

# B84771
2-line filters with IEC connector

## Characteristics and ordering codes

| $I_R$ A | $C_R$ X2 µF | $C_R$ Y2 pF | $L_R$ mH | $I_{LK}$ [1] mA | $R_{dis}$ MΩ | Approx. weight g | Ordering code | Approvals | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Snap-in versions with tab connectors 6.3 × 0.8 mm² $V_R$ = 250 V AC/DC** | | | | | | | | | | |
| 1 | 1 × 0.1 | 2 × 2200 | 2 × 12 | 0.173 | 1 | 40 | B84771A3001A000 | × | × | × |
| 1 | 1 × 0.1 | – | 2 × 12 | 0 | 1 | 40 | B84771M3001A000 | × | × | × |
| 3 | 1 × 0.1 | 2 × 2200 | 2 × 2.5 | 0.173 | 1 | 40 | B84771A3003A000 | × | × | × |
| 3 | 1 × 0.1 | – | 2 × 2.5 | 0 | 1 | 40 | B84771M3003A000 | × | × | × |
| 6 | 1 × 0.1 | 2 × 2200 | 2 × 0.84 | 0.173 | 1 | 40 | B84771A3006A000 | × | × | × |
| 6 | 1 × 0.1 | – | 2 × 0.84 | 0 | 1 | 40 | B84771M3006A000 | × | × | × |
| 8 | 1 × 0.1 | 2 × 2200 | 2 × 0.45 | 0.173 | 1 | 40 | B84771A3008A000 | × | × | × |
| 8 | 1 × 0.1 | – | 2 × 0.45 | 0 | 1 | 40 | B84771M3008A000 | × | × | × |
| 10 | 1 × 0.1 | 2 × 2200 | 2 × 0.24 | 0.173 | 1 | 40 | B84771A3010A000 | × | × | × |
| 10 | 1 × 0.1 | – | 2 × 0.24 | 0 | 1 | 40 | B84771M3010A000 | × | × | × |
| 12 | 1 × 0.1 | 2 × 2200 | 2 × 0.14 | 0.173 | 1 | 40 | B84771A3012A000 | × [2] | × | × |
| 12 | 1 × 0.1 | – | 2 × 0.14 | 0 | 1 | 40 | B84771M3012A000 | × [2] | × | × |
| 15 | 1 × 0.1 | 2 × 2200 | 2 × 0.09 | 0.173 | 1 | 40 | B84771A3015A000 | × [2] | × | × |
| 15 | 1 × 0.1 | – | 2 × 0.09 | 0 | 1 | 40 | B84771M3015A000 | × [2] | × | × |
| **Screw mounting versions with litz wires $V_R$ = 250 V AC/DC** | | | | | | | | | | |
| 1 | 1 × 0.1 | 2 × 2200 | 2 × 12 | 0.173 | 1 | 40 | B84771A0001L000 | × | × | × |
| 1 | 1 × 0.1 | – | 2 × 12 | 0 | 1 | 40 | B84771M0001L000 | × | × | × |
| 3 | 1 × 0.1 | 2 × 2200 | 2 × 2.5 | 0.173 | 1 | 40 | B84771A0003L000 | × | × | × |
| 3 | 1 × 0.1 | – | 2 × 2.5 | 0 | 1 | 40 | B84771M0003L000 | × | × | × |
| 6 | 1 × 0.1 | 2 × 2200 | 2 × 0.84 | 0.173 | 1 | 40 | B84771A0006L000 | × | × | × |
| 6 | 1 × 0.1 | – | 2 × 0.84 | 0 | 1 | 40 | B84771M0006L000 | × | × | × |
| 8 | 1 × 0.1 | 2 × 2200 | 2 × 0.45 | 0.173 | 1 | 40 | B84771A0008L000 | × | × | × |
| 8 | 1 × 0.1 | – | 2 × 0.45 | 0 | 1 | 40 | B84771M0008L000 | × | × | × |
| 10 | 1 × 0.1 | 2 × 2200 | 2 × 0.24 | 0.173 | 1 | 40 | B84771A0010L000 | × | × | × |
| 10 | 1 × 0.1 | – | 2 × 0.24 | 0 | 1 | 40 | B84771M0010L000 | × | × | × |
| 12 | 1 × 0.1 | 2 × 2200 | 2 × 0.14 | 0.173 | 1 | 40 | B84771A0012L000 | × [2] | × | × |
| 12 | 1 × 0.1 | – | 2 × 0.14 | 0 | 1 | 40 | B84771M0012L000 | × [2] | × | × |
| 15 | 1 × 0.1 | 2 × 2200 | 2 × 0.09 | 0.173 | 1 | 40 | B84771A0015L000 | × [2] | × | × |
| 15 | 1 × 0.1 | – | 2 × 0.09 | 0 | 1 | 40 | B84771M0015L000 | × [2] | × | × |

× = Approval granted

[1] Calculation according to IEC 60939-1, annex A, at rated voltage and 50 Hz. In practice are up to double values to be expected due to the insulation resistance values of the used ceramic capacitors. For the medical version results computationally the value 0. In practice are values 1 ... 2 mA to be expected due to the insulation resistance values of the used materials.

[2] ENEC approval at 12 A and 15 A types with 10 A

## B84773
2-line filters with IEC connector and fuse holder

### Characteristics and ordering codes

| $I_R$ A | $C_R$ X2 µF | $C_R$ Y2 pF | $L_R$ mH | $I_{LK}$ [1] mA | $R_{bleed}$ MΩ | Approx. weight g | Ordering code | Approvals | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **$V_R$ = 250 V AC/DC** | | | | | | | | | | |
| 1 | 1 × 0.1 | 2 × 2200 | 2 × 5.4 | 0.173 | 1 | 55 | B84773A0001A000 | × | × | × |
| 1 | 1 × 0.1 | – | 2 × 5.4 | 0 | 1 | 55 | B84773M0001A000 | × | × | × |
| 2 | 1 × 0.1 | 2 × 2200 | 2 × 2.7 | 0.173 | 1 | 55 | B84773A0002A000 | × | × | × |
| 2 | 1 × 0.1 | – | 2 × 2.7 | 0 | 1 | 55 | B84773M0002A000 | × | × | × |
| 4 | 1 × 0.1 | 2 × 2200 | 2 × 1.1 | 0.173 | 1 | 55 | B84773A0004A000 | × | × | × |
| 4 | 1 × 0.1 | – | 2 × 1.1 | 0 | 1 | 55 | B84773M0004A000 | × | × | × |
| 6 | 1 × 0.1 | 2 × 2200 | 2 × 0.3 | 0.173 | 1 | 55 | B84773A0006A000 | × | × | × |
| 6 | 1 × 0.1 | – | 2 × 0.3 | 0 | 1 | 55 | B84773M0006A000 | × | × | × |
| 10 | 1 × 0.1 | 2 × 2200 | 2 × 0.2 | 0.173 | 1 | 75 | B84773A0010A000 | × | × | × |
| 10 | 1 × 0.1 | – | 2 × 0.2 | 0 | 1 | 75 | B84773M0010A000 | × | × | × |

## B84776
2-line filters with IEC connector, fuse holder and switch

### Characteristics and ordering codes

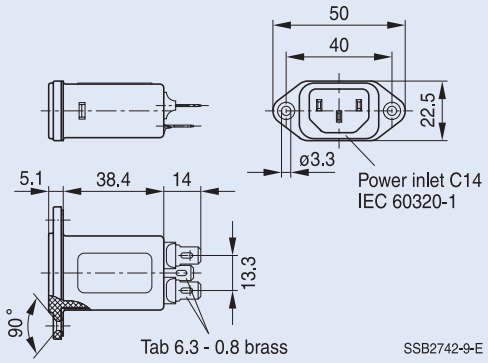
| $I_R$ A | $C_R$ X2 µF | $C_R$ Y2 pF | $L_R$ mH | $I_{LK}$ [1] mA | $R_{bleed}$ MΩ | Approx. weight g | Ordering code | Approvals | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **$V_R$ = 250 V AC/DC** | | | | | | | | | | |
| 1 | 1 × 0.22 | 2 × 2200 | 2 × 7.6 | 0.173 | 1 | 90 | B84776A0001A000 | × | × | × |
| 1 | 1 × 0.22 | – | 2 × 7.6 | 0 | 1 | 90 | B84776M0001A000 | × | × | × |
| 2 | 1 × 0.22 | 2 × 2200 | 2 × 2.0 | 0.173 | 1 | 90 | B84776A0002A000 | × | × | × |
| 2 | 1 × 0.22 | – | 2 × 2.0 | 0 | 1 | 90 | B84776M0002A000 | × | × | × |
| 4 | 1 × 0.22 | 2 × 2200 | 2 × 1.0 | 0.173 | 1 | 90 | B84776A0004A000 | × | × | × |
| 4 | 1 × 0.22 | – | 2 × 1.0 | 0 | 1 | 90 | B84776M0004A000 | × | × | × |
| 6 | 1 × 0.22 | 2 × 2200 | 2 × 0.46 | 0.173 | 1 | 90 | B84776A0006A000 | × | × | × |
| 6 | 1 × 0.22 | – | 2 × 0.46 | 0 | 1 | 90 | B84776M0006A000 | × | × | × |
| 10 | 1 × 0.22 | 2 × 2200 | 2 × 0.33 | 0.173 | 1 | 130 | B84776A0010A000 | × | × | × |
| 10 | 1 × 0.22 | – | 2 × 0.33 | 0 | 1 | 130 | B84776M0010A000 | × | × | × |

× = Approval granted

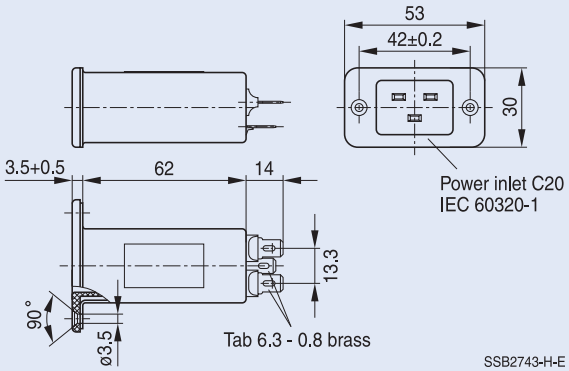
[1] Calculation according to IEC 60939-1, annex A, at rated voltage and 50 Hz. In practice are up to double values to be expected due to the insulation resistance values of the used ceramic capacitors. For the medical version results computationally the value 0. In practice are values 1 ... 2 mA to be expected due to the insulation resistance values of the used materials.

## B84771

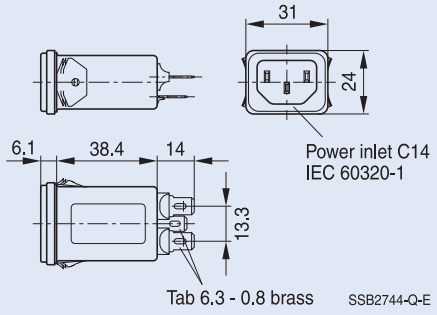
Dimensional drawings of screw mounting versions
(1 A ... 15 A types)



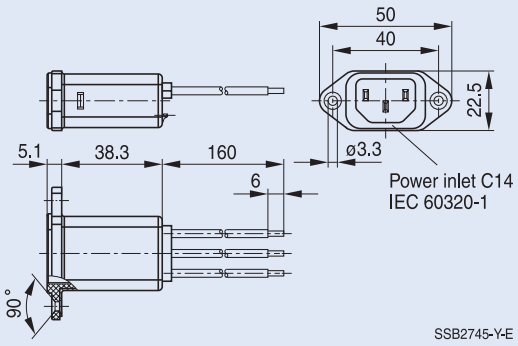

Dimensional drawings of screw mounting versions
(16 A ... 20 A types)




Dimensional drawings of snap-in versions, snapper on vertical side
(1 A ... 15 A types)

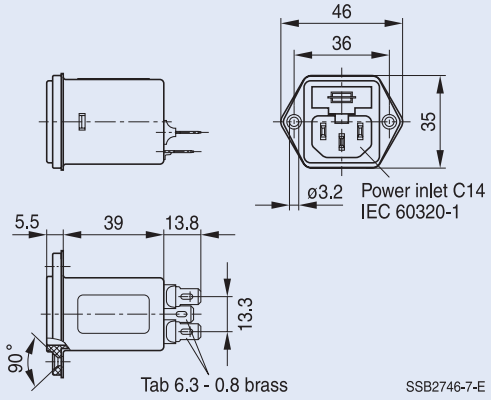



Dimensional drawings of versions with litz wire output



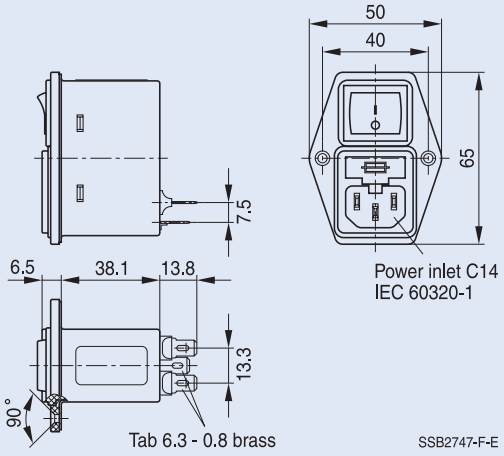

## B84773

Dimensional drawing




## B84776

Dimensional drawing





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