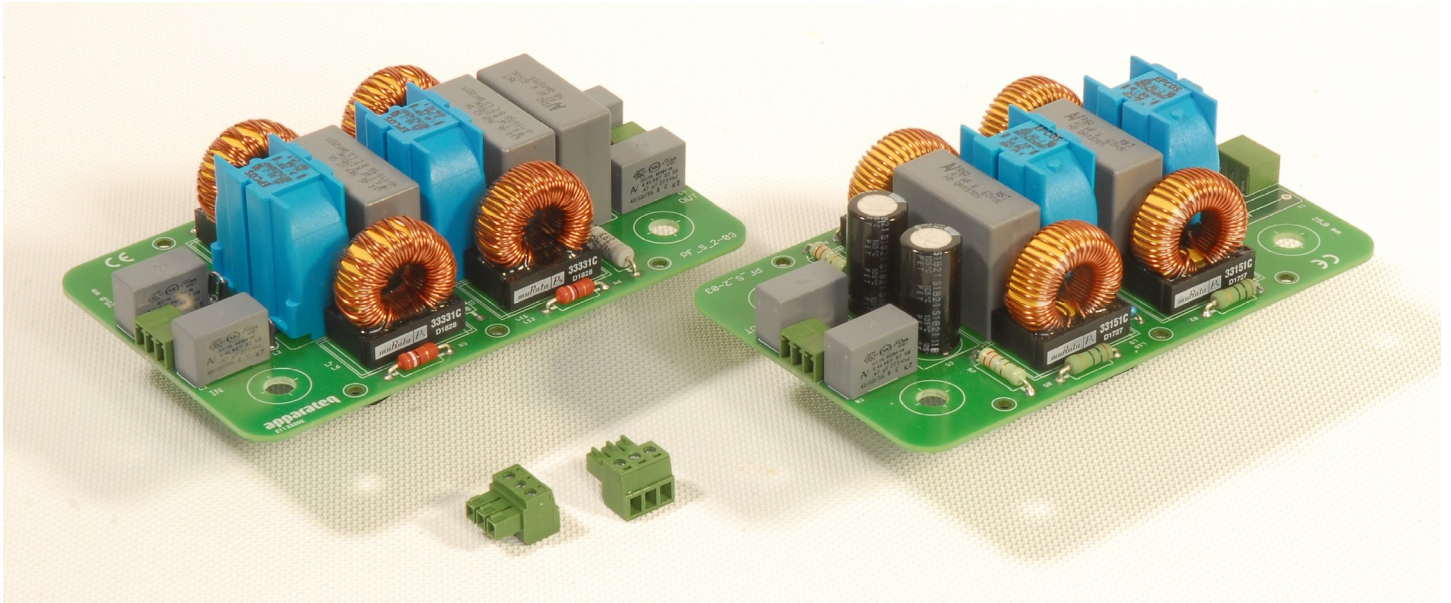


PSC Series

Power supply filters

apparateq

Electronics for Research and Science



- Filters DC outputs
- Passive RCL-filter
- High suppression of noise
- Low sensitivity to load changes
- Fits optical tables
- Variants for 1 or 2 voltage rails
- Customized versions available

The PSC series of power supply filters provides suppression of noise over a wide frequency range. In addition, the PSC series includes common-mode inductors to facilitate the suppression of common-mode noise.

Noisy power supplies are often a limiting factor in today's high-resolution acquisition systems. In many cases, switched mode power supplies are excluded for reasons of noise, but even linear power supplies emit noise.

The design of the PSC series ensures a well-behaved attenuation response over a wide range of loads, in contrast to common LC-filters which often suffer from peaking at light loads.

The PSC series is designed as an open frame filter to allow the user to build the filter into a larger system, or to use the filter directly on an optical table, thanks to its mounting holes placed in a 25 mm grid.

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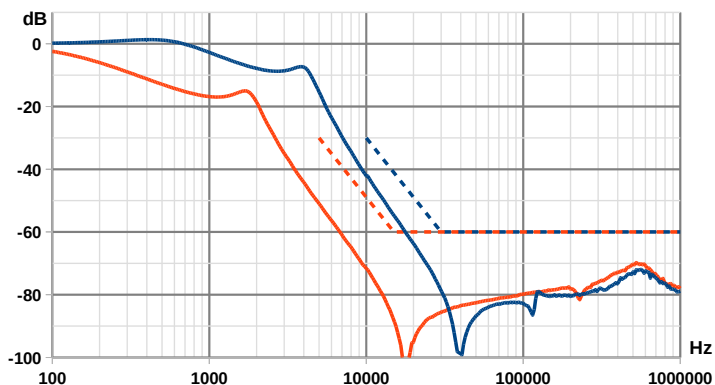
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Specifications and characteristics

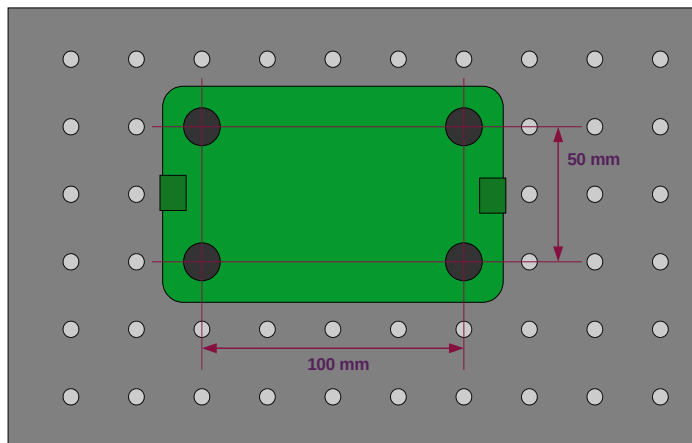
	PSC_S	PSC_D (NEW)	PSC_S-LZ	PSC_D-LZ (NEW)
Configuration	One rail + return, single supplies	Two rails + return, for dual supplies	One rail + return, single supplies	Two rails + return, for dual supplies
Polarity	Non-polarized	Non-polarized	Polarized	Polarized
Voltage	≤50 V	≤50 V	≤50 V	≤50 V
Current	≤250 mA	≤250 mA	≤1 A	≤1 A
DC resistance	≤2 Ω	≤2 Ω	≤1 Ω	≤1 Ω
Attenuation Diff. mode	≥30 dB @ 10 kHz ≥50 dB, 20 kHz - 1 MHz	≥30 dB @ 10 kHz ≥50 dB, 20 kHz - 1 MHz	≥50 dB @ 10 kHz ≥60 dB, 20 kHz - 1 MHz	≥50 dB @ 10 kHz ≥60 dB, 20 kHz - 1 MHz
Dimensions	130 x 80 x 45 mm	130 x 100 x 45 mm	130 x 80 x 45 mm	130 x 100 x 45 mm

Filters for the reduction of power supply noise need to be designed for that specific purpose. Critical parameters are the DC-resistance, the output impedance through the frequency range of interest, and a low sensitivity to load changes. In addition, there may be requirements to the reduction of common-mode noise. The PSC-series of power supply filters addresses all of this.



The graph above shows the specified differential mode attenuation (the dotted lines), and an example of a measured attenuation, for the standard filter (blue) and the Low-Z variant (orange). The graph applies to the single supply versions without load. The user may add further capacitance on the output to increase the attenuation.

The PSC-series comes with stand-offs and finger screws to let you securely mount the filter onto an optical table. The filter fits optical tables with 25 mm grid and 6 mm thread. As an option, the filters can be delivered for tables with 1" grid and ¼"-20 thread. The drawing below shows the outline for the single supply version.



The pluggable terminal blocks supplied with the filter accept wires of sizes 26 AWG to 16 AWG (0.129 – 1.31 mm²). Being an open frame filter the wiring and handling of the filter should be carried out by qualified personnel.

Need higher current handling or lower impedance? Take a look at our PS-series power supply filters without common-mode suppression. Need perhaps ultimate isolation? Consider our series of optical power isolators which offers galvanic isolation and unprecedented noise suppression.