

# Harmonic filters

## Type LFF; Fixed tuned harmonic filters

**PSS™ fixed, tuned harmonic filters** are the ideal solution for applications where harmonics from individual loads (or groups of non-linear loads) are desired mitigated. All passive harmonic filters offered by PSS include CPR™ technology for maximum life and highest reliability.

### Filterbank Design Choices

Fixed harmonic filters are available for the attenuation of any and all harmonic frequencies. No matter if you need to filter out a single dominant harmonic frequency or a full range of frequencies (broadband), we can meet your needs. Use PSS filterbanks to minimize harmonics right at the source and conform to IEEE-519 at the utility point of common coupling (PCC).

### Typical Applications

Fixed harmonic filters are commonly applied for attenuation of:

- Air handling units
- Elevators and escalators
- Water pumping
- Oil pumping
- Induction heating
- Battery chargers and welders
- Power distribution
- Uninterruptible power supplies

### Avoiding power system resonance

For selection of equipment recommendation best suited for client objectives, our analyst

models three alternative solutions for potential effect on system frequency response:

- Active harmonic filters
- Tuned LC shunt filterbank per analysis of your power system data
- Low pass, anti-resonant harmonic filters for broad band filtering

### System analysis for guaranteed results

Power system analysis, feasibility studies, financial pro-forma, economic forecast and field metering surveys are all services available through PSS Consultant Services Group. With sufficient power system load and impedance data, electrical utility account histories, and clients statement of the power quality objectives for the project, our consultants submit recommendations with a performance guarantee, and monthly savings projections through ROI life cycle of the project.

### OEM versions available

For those installations where you need to install the harmonic filter within your motor control center or integrate it into your adjustable speed drive enclosures, PSS offers an economical open style filter. We'll do our best to accommodate your individual needs for physical size and cost. Send us your requirements for a prompt quotation.

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### Any Ratings Available

- Any kVAR rating
- Low or medium voltage
- Any frequency
- Standard and custom design

### Standard (fifth harmonic) tuned filters

By far, the most common fixed frequency tuned harmonic filter is the fifth (5th) LC shunt. In many non-linear load facilities, this is the dominant harmonic. In some cases, the fifth harmonic may be as high as 60 to 80 percent of the fundamental current, while other integers may be quite low in magnitude. Filters are often tuned to the fifth harmonic to minimize system harmonic distortion levels.

### Other Tuning Frequencies

PSS offers filter designs for any power harmonic frequency. We also offer mitigation for multiple frequencies, as a low pass (broadband) model. For ordering single tuning frequency design, modify our catalog number from fifth to the desired integer (seventh, eleventh, etc). Contact our office for multiple frequency filters and for low pass (broadband) applications.

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### 240 Volts, 60hz, Nema 1 enclosed – (Fifth harmonic filters)

kVAR	NO Fuses	Model Fuses/Lights	Main circuit breaker
25	LFF 0025 240 N1 5TH	LFF 0025 240 N1 5TH FUS LMP	LFF 0025 240 N1 5TH MCB
50	LFF 0050 240 N1 5TH	LFF 0050 240 N1 5TH FUS LMP	LFF 0050 240 N1 5TH MCB
75	LFF 0075 240 N1 5TH	LFF 0075 240 N1 5TH FUS LMP	LFF 0075 240 N1 5TH MCB
100	LFF 0100 240 N1 5TH	LFF 0100 240 N1 5TH FUS LMP	LFF 0100 240 N1 5TH MCB
25	LFF 0025 240 N1 7TH	LFF 0025 240 N1 7TH FUS LMP	LFF 0025 240 N1 7TH MCB
50	LFF 0050 240 N1 7TH	LFF 0050 240 N1 7TH FUS LMP	LFF 0050 240 N1 7TH MCB
75	LFF 0075 240 N1 7TH	LFF 0075 240 N1 7TH FUS LMP	LFF 0075 240 N1 7TH MCB
100	LFF 0100 240 N1 7TH	LFF 0100 240 N1 7TH FUS LMP	LFF 0100 240 N1 7TH MCB

### 480 Volts, 60hz, Nema 1 enclosed – (Fifth and seventh harmonic filters)

kVAR	NO Fuses	Model Fuses/Lights	Main circuit breaker
25	LFF 0025 480 N1 5TH	LFF 0025 480 N1 5TH FUS LMP	LFF 0025 480 N1 5TH MCB
50	LFF 0050 480 N1 5TH	LFF 0050 480 N1 5TH FUS LMP	LFF 0050 480 N1 5TH MCB
75	LFF 0075 480 N1 5TH	LFF 0075 480 N1 5TH FUS LMP	LFF 0075 480 N1 5TH MCB
100	LFF 0100 480 N1 5TH	LFF 0100 480 N1 5TH FUS LMP	LFF 0100 480 N1 5TH MCB
125	LFF 0125 480 N1 5TH	LFF 0125 480 N1 5TH FUS LMP	LFF 0125 480 N1 5TH MCB
150	LFF 0150 480 N1 5TH	LFF 0150 480 N1 5TH FUS LMP	LFF 0150 480 N1 5TH MCB
25	LFF 0025 480 N1 7TH	LFF 0025 480 N1 7TH FUS LMP	LFF 0025 480 N1 7TH MCB
50	LFF 0050 480 N1 7TH	LFF 0050 480 N1 7TH FUS LMP	LFF 0050 480 N1 7TH MCB
75	LFF 0075 480 N1 7TH	LFF 0075 480 N1 7TH FUS LMP	LFF 0075 480 N1 7TH MCB
100	LFF 0100 480 N1 7TH	LFF 0100 480 N1 7TH FUS LMP	LFF 0100 480 N1 7TH MCB
125	LFF 0125 480 N1 7TH	LFF 0125 480 N1 7TH FUS LMP	LFF 0125 480 N1 7TH MCB
150	LFF 0150 480 N1 7TH	LFF 0150 480 N1 7TH FUS LMP	LFF 0150 480 N1 7TH MCB

**5th**

**7th**

Contact PSS for other voltage or kVAR ratings.

#### Questions?

Call us at 501.327.6456 or visit us on the Web at [www.pssamerica.com/rfi](http://www.pssamerica.com/rfi)

# Harmonic filters

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### Dimensions: 240V, 60hz, Nema 1 floor standing enclosure

240 volts, 60hz Catalog number	Height	Dimensions (in / mm)		Weight (Lbs / kg)
		Width	Depth	
LFF 0025 240 N1 5TH	48 / 1200	24 / 600	32 / 800	330.6 / 150
LFF 0050 240 N1 5TH	48 / 1200	24 / 600	32 / 800	363.7 / 165
LFF 0075 240 N1 5TH	48 / 1200	24 / 600	32 / 800	374.7 / 170
LFF 0100 240 N1 5TH	48 / 1200	24 / 600	32 / 800	485 / 220
LFF 0025 240 N1 7TH	48 / 1200	24 / 600	32 / 800	330.6 / 150
LFF 0050 240 N1 7TH	48 / 1200	24 / 600	32 / 800	363.7 / 165
LFF 0075 240 N1 7TH	48 / 1200	24 / 600	32 / 800	374.7 / 170
LFF 0100 240 N1 7TH	48 / 1200	24 / 600	32 / 800	485 / 220

### Dimensions: 480V, 60hz, Nema 1 floor standing enclosure

480 volts, 60hz Catalog number	Height	Dimensions (in / mm)		Weight (Lbs / kg)
		Width	Depth	
LFF 0025 480 N1 5TH	48 / 1200	24 / 600	32 / 800	308 / 140
LFF 0050 480 N1 5TH	48 / 1200	24 / 600	32 / 800	341 / 155
LFF 0075 480 N1 5TH	48 / 1200	24 / 600	32 / 800	352 / 160
LFF 0100 480 N1 5TH	48 / 1200	24 / 600	32 / 800	385 / 175
LFF 0125 480 N1 5TH	48 / 1200	24 / 600	32 / 800	440 / 200
LFF 0150 480 N1 5TH	48 / 1200	24 / 600	32 / 800	462 / 210
LFF 0025 480 N1 7TH	48 / 1200	24 / 600	32 / 800	308 / 140
LFF 0050 480 N1 7TH	48 / 1200	24 / 600	32 / 800	341 / 155
LFF 0075 480 N1 7TH	48 / 1200	24 / 600	32 / 800	352 / 160
LFF 0100 480 N1 7TH	48 / 1200	24 / 600	32 / 800	385 / 175
LFF 0125 480 N1 7TH	48 / 1200	24 / 600	32 / 800	440 / 200
LFF 0150 480 N1 7TH	48 / 1200	24 / 600	32 / 800	462 / 210