

# Correct power factor and increase load capacity



## UNIPAK filters

Low voltage fixed capacitor solutions with detuned, anti-resonance reactors.

The application of power factor correction products has become more challenging due to the proliferation of harmonic producing loads. It is essential to choose a partner who has the knowledge to help “avoid potential misapplications.” Eaton has the products and services to help you make informed choices when applying these products.

## Why filtering?

The use of the term “filtering” has many meanings when discussing electrical equipment. The primary use of the UNIPAK and/or AUTOVAR® filter within a power system is to supply reactive power (VARs) to correct low power factor. Reactive power is supplied through the use of capacitors. The issue is that capacitors are susceptible to damage if they encounter harmonics (which are very

prevalent in today’s electrical environments). The addition of filtering helps to protect the capacitors from harmonic currents and the system from the harmful effects of harmonic resonance. Eaton’s UNIPAK or AUTOVAR filters are not designed to remove or lower harmonics, but merely to prevent resonance (which can be caused by harmonics) and allow the unit to provide the required reactive (VAR) power in a harmonic electrical environment.

## Description

These products correct power factor, eliminate or reduce penalties charged by the utility, and increase load capacity. Low voltage filtered capacitor banks are available from 208 V to 600 V (see kVAR sizing chart on the back page). Eaton can also provide custom filtered power factor solutions up to 13.8 kV. These products will help you safely diminish or eliminate power factor penalties. In many cases, the payback is less than two years.

Eaton’s fixed or automatically switched capacitor solutions with detuned, anti-resonance reactors are applicable when accurate power factor correction is required in environments where harmonic distortion exists. These products are tuned to the 4.2nd harmonic (other tuning frequencies are available).

## Benefits

- Reduces or eliminates expensive penalties levied by the utility based on a low power factor
- Increases available transformer and cable capacity
- Helps to prevent damaging and dangerous harmonic resonance
- Can operate in a harmonic environment

## Features

- Can correct and maintain desired power factor in harmonic environments
- Ideal for power systems with 6-pulse drive and rectifiers
- Includes three replaceable fuses and fuse cleared indicator lights on front
- Standard ratings up to 600 Vac; other ratings available
- Customer termination lugs (including grounding lug) are standard
- UL®/CSA® listed
- Iron core reactors
- Tuned to the 4.2nd harmonic (other tuning frequencies available)
- Fixed or automatically switched designs available
- Low voltage capacitor cells have a five-year warranty
- Custom-designed medium voltage filters (through 13.8 kV) are available
- Mounting brackets and feet are standard



Powering Business Worldwide

### AUTOVAR options available

- Eaton's molded-case circuit breakers
- A variety of Eaton electronic metering solutions
- Remote alarm relay
- Split-core current transformer
- Hand-Off-Auto switch
- NEMA® 3R enclosure

### Other Eaton power quality products

- Fixed capacitor banks (low and medium voltage)
- Automatically switched capacitor banks (low and medium voltage)
- Active harmonic filters
- Electronic VAR injectors
- Surge protection
- Phase shifting transformers
- K-Factor transformers
- Single- and three-phase UPS

### Eaton's power quality hotline

Having trouble understanding a problem related to power quality, reliability or energy management? Confused about what technology to apply to improve facility uptime or cut energy costs? Call our Power Quality Hotline at 1-800-809-2772 (option 4, sub-option 2) to talk to power quality experts, or e-mail us at PFC@eaton.com.

### Total solutions for maximizing uptime

Eaton's Electrical Services & Systems provides a full range of on-site services, including installation, startup/commissioning, preventive and predictive maintenance, systems integration, power systems studies, turnkey solutions, and equipment life extension. And, by choosing our startup/commissioning services on your Eaton product, you will receive a one-year extension to the factory warranty.



### AUTOVAR filter

Low voltage switched capacitor solutions with integral detuned, anti-resonance reactors.

### kVAR Size Availability

Filter	240 V	480 V	600 V
UNIPAK	7.5–150	15–300	15–250
AUTOVAR	75–550	150–1100	150–1100

**Note:** Additional sizes/voltages are available. Contact Eaton's Technical Resource Center (TRC) Power Factor Application Engineers at 1-800-809-2772; choose option 4, then option 2.

For additional product information, please visit our website: [www.eaton.com/PFC](http://www.eaton.com/PFC)

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