



Harmonic mitigation options

Services and solutions to improve total system efficiency

Harmonics are caused by non-linear devices operating and interacting within the power system. Device examples include transformers, motors, arc furnaces, converters, fluorescent lighting, etc. Harmonic distortion and resonance can lead to a variety of performance issues including but not limited to decreased power factor, voltage/current fluctuations, increased system losses, spurious fuse operations, and equipment overheating and failures.

Eaton offers a full portfolio of harmonic products to counteract these negative effects and provide a more stable system. Our engineering team partners directly with customers in development activities- including new bank design or optimizing an underperforming system.

Services Include

- Performing onsite systems studies by Eaton personnel
- Analysis of results utilizing Eaton's proprietary industry-proven CYME power system analysis tools
- Determination of system needs and equipment interaction
- Proposal of various filter banks and control concepts
- Leading the project from manufacturing to installation, and commissioning startup
- Post-energization support including harmonic stability and other related field testing & studies



EATON

Powering Business Worldwide

Unique system solutions

Since each harmonic situation is unique, Eaton's solutions are tailored to address the system specific needs. Our team of highly skilled engineers works closely with customers to understand their individual challenges and design a solution to address them.

- Modification of existing banks: ratings, size, location and connection strategy
- Application of additional filters at appropriate locations
- Control adjustment to avoid steps that cause resonance
- Addition of line reactors or isolation transformers in series with adjustable speed drives to limit higher harmonics
- Replacement of overheated transformers with larger capacity units

While it is not practical to eliminate non-linear devices in the power system, Eaton's engineers will work with customers to develop custom solutions to minimize the negative results of the resulting harmonics, and to ensure a stable and reliable system.



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