

Active Harmonic Filters



SAFETY **RELIABILITY**
DURABILITY **EFFICIENCY**
CONTINUITY



The quality of electrical energy

In recent years we have become increasingly dependent on electricity. Without electricity everything comes to a standstill. Therefore the quality of the electrical energy is of strategic importance for continuity, reliability and energy efficiency. This quality of current and voltage is called Power Quality. New technologies disrupt the Power Quality. At the same time equipment is more sensitive to voltage fluctuations. That combination can have unpleasant, costly and sometimes dangerous consequences. Almost half of all companies and institutions struggle with some sort of problem in the field of Power Quality.

Power Quality problems

Power Quality can affect the overall performance, but is often easily overlooked. A poor Power Quality can reveal itself by the flickering of lights or a humming sound in the installation, but it can also remain unnoticed. In time it can cause really serious problems, such as: production shut down, heating of cables and premature aging of electrical equipment. Unexplained disturbances or problems in the company's installation can also be the result of poor Power Quality.

Low efficiency distribution lines
High percentage energy losses
Increased wear of equipment
Inaccuracy of equipment and systems
Unreliability of the installation

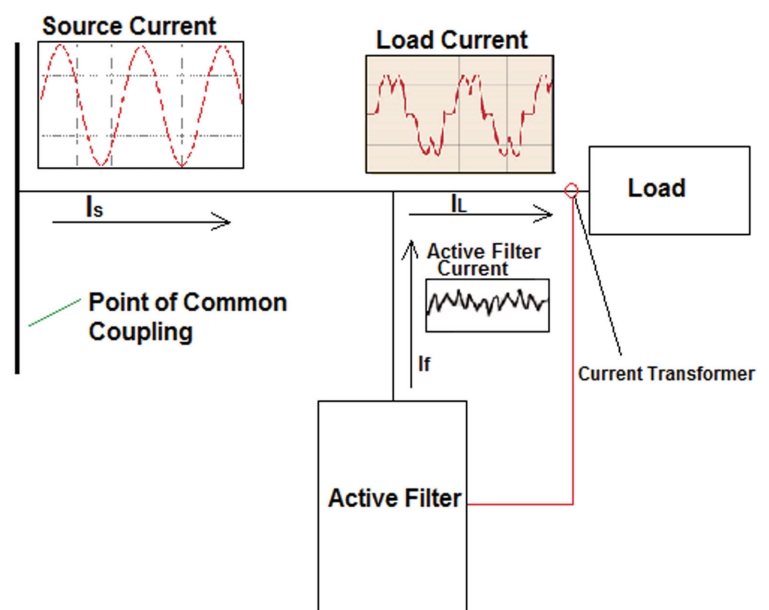
Clean Power

An efficient solution to improve the Power Quality is to install an Active Harmonic Filter. An Active Harmonic Filter reduces the (harmonic) pollution of the electrical system, thus providing "Clean Power". Clean Power optimizes the Power Quality, which increases energy efficiency, capacity and reliability. An additional advantage is that this Active Harmonic Filter has a positive effect on the wear and service life of electrical devices.

Good Power Quality

Optimizes energy efficiency
Enhances continuity
Increases productivity
Improves reliability
Increases capacity
Ensures safety
Improves lifetime
Reduces maintenance costs

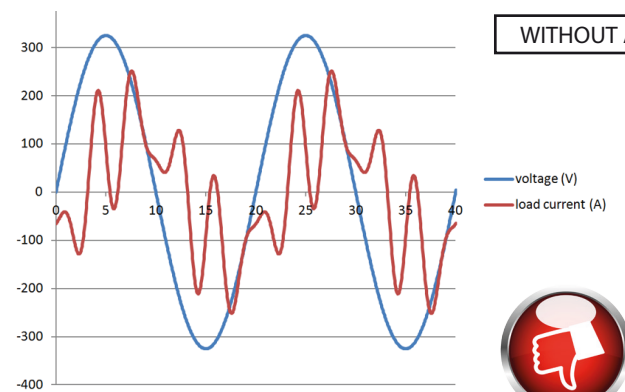
Good Investment



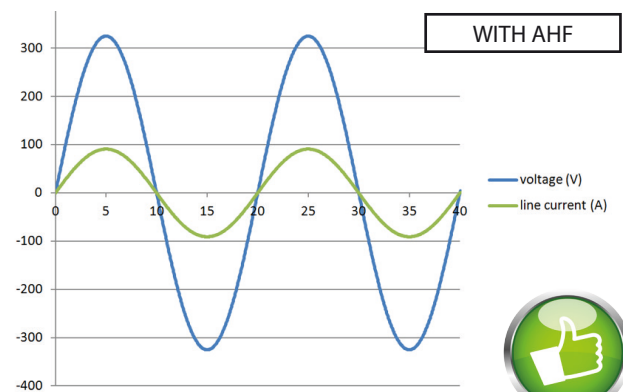


Active Harmonic Filter (AHF)

The Active Harmonic Filter monitors the current signal and compensates for the unwanted elements of the measured current. Thus, the Active Harmonic Filter ensures a harmonic suppression independently of the number of loads connected. Furthermore the filter corrects the power factor, improving the systems' efficiency while reducing harmonic distortion. The reaction time of an Active Harmonic Filter is very fast, which means that harmonic distortions and errors can be detected and removed directly, before they can cause any damage.



Harmonic disturbances caused by e.g. non-linear loads



Reactive power & harmonic oscillations are actively compensated

Active Harmonic Filter

Modular System

The Active Harmonic Filter is available as a plug-in module for rack-mounting in a cabinet. This can be an existing cabinet, a cabinet of choice or it can be delivered as a complete cabinet of 30A up to 300A. This makes the filter suitable for every location and application, and if necessary, easily expandable in the future.

Wall Mount System

The Active Harmonic Filter can also be delivered as a Wall Mount System. The Wall Mount System comes in multiple amperages (30A to >300A) and options. With this system it is also possible to combine several single units. We can give advice in choosing the right filter for each specific situation.

**Ultra-fast
Super-compact**

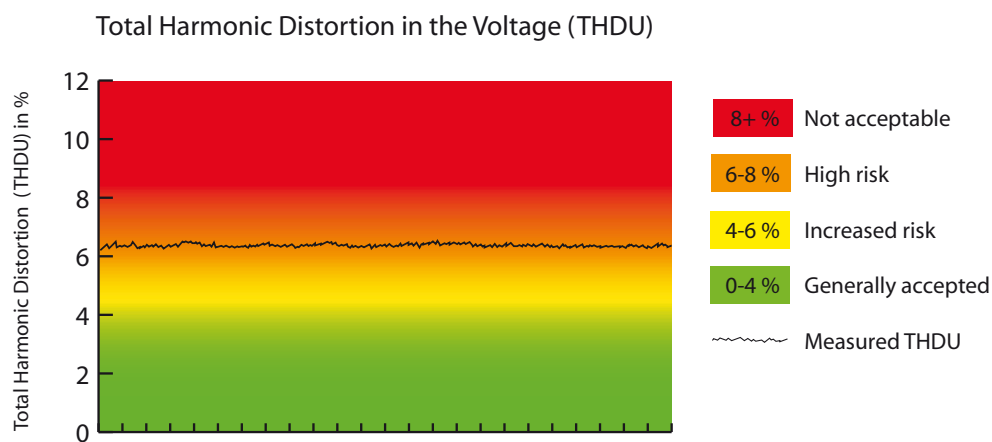
**Numerous options
Optimized for maintenance**

**Suitable for industrial use
Automatically adapts to changes**



Reducing Harmonic Voltage distortion

Harmonic Voltage Distortion (THDU) is caused mainly by a high level of Current Distortion. The level of Harmonic Voltage Distortion (THDU) is very much dependent on the source impedance. Higher source impedance means a higher THDU. Harmonic Voltage Distortions can affect the operation of all devices connected to the same power grid. Active Harmonic Filtering reduces the THDU to accepted values of <4%, solving existing Power Quality problems or eliminating the risk of the occurrence of future Power Quality problems.



Features

- Ultra-fast mitigation of harmonics
- Harmonic compensation for 3-wire and 4-wire technology
- Up to 50th harmonic each individually selectable
- Automatically adjusts to changing conditions
- Immune to resonance
- Ultra-fast Reactive Power Compensation
- Flicker compensation
- Load balancing between phases and unload neutral wire
- Grid resonancy detection
- Ethernet and Ethercat system for interconnection
- Choice between Modular and Wall Mount System

Application of Active Harmonic Filtering

Active Harmonic Filtering can be applied to all businesses where optimal Power Quality is essential. The Active Harmonic Filter is very fast, intelligent and versatile, making the filter perfectly suitable to compensate a broad range of pollution types. Active Harmonic Filtering can be used for improving the continuity of the business, but also to increase the capacity and reliability, reduce costs and ensure safety. It improves the Power Quality of all businesses that have non-linear loads installed, as for example AC drives, DC drives, UPS systems, switching power supplies (computers), rectifiers, inverters, converters, LED lighting, welding equipment, EAF and all sorts of motors, compressors and pumps. Due to the ever increasing use of power electronics, these nonlinear loads are present in a wide variety of industries.

Industry

- Chemical industry
- Automotive industry
- Food & beverage industry
- Printing industry
- Steel industry
- Cement industry
- Oil & Gas industry
- Paper industry
- Offshore industry
- Yacht building industry

Commercial

- Datacenters
- IT facilities
- Hospitals
- Casino's
- Amusement parks
- Airports
- Shopping malls
- Hotels & resorts
- Wellness resorts

Infrastructure

- Cranes
- Lifts
- Water treatment plants
- Metro stations
- Solar farms
- Wind farms
- Heating systems
- Ventilation systems
- Air conditioning systems

References

Nyrstar Budel B.V. | zinc producer

Harmonic pollution due to the use of rectifiers, with disturbances and damages as a result.

Reduced harmonic pollution - Increased reliability.

Rijkswaterstaat Netherlands | Roertunnel (A73)

Active Harmonic Filtering at each service building supplying the tunnel. "Safety is removing uncertainties."

Reduced harmonics and reactive power - Increased safety.

Sappi Maastricht B.V. | paper producer

Unexplainable problems with the 'analog-to-digital' cards. A Power Quality survey showed presence of harmonics.

Reduced production waste - Reduced costs.

Top 5 yacht builder in The Netherlands

Searched for an innovative solution to increase reliability and reduce problems caused by harmonics.

Reduced harmonic pollution - Increased reliability.

International producer of panel materials

Faced challenges with the implementation of a new production line, due to Power Quality problems.

Reduced harmonic pollution - Improved productivity.

Data center in the region Amsterdam

Overloading of UPS, transformers and distributors due to the presence of harmonic pollution and reactive power.

Optimized Power Quality - Increased reliability.

What we do

We help companies and institutions to improve the energy efficiency and Power Quality, through our knowledge and experience. Next to training, measurements and advise, we also offer several technological systems and products to measure, monitor and improve the energy consumption and energy quality (Power Quality). With our experience and wide range of products many Power Quality problems are solved or prevented, and a lot of electric energy has been saved. Companies are assured of energy efficiency, reliability and safety.

Field of work

Power Quality Surveys
Optimizing Power Quality

Monitoring
Energy Saving

Training & Lectures
Service & Maintenance

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OUR PASSION

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