

ORTEA NE
XT

Innovative solutions for sustainable
power quality since 1969



ACTIVE FILTERS



ORTEA NEXT

ORTEA SPA

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OUR BRANDS:

ORTEA
BY ORTEA NEXT

VOLTAGE STABILIZERS
SAG COMPENSATORS
LV TRANSFORMERS AND REACTORS

ICAR
BY ORTEA NEXT

POWER FACTOR CORRECTION SYSTEMS
ACTIVE HARMONIC FILTERS

ENERSOLVE
BY ORTEA NEXT

ENERGY EFFICIENCY SMART DEVICES

PowerSines
BY ORTEA NEXT

ENERGY SAVING VOLTAGE OPTIMIZERS

GENERAL
SALES
CONDITIONS



ABOUT US

Innovative solutions for sustainable power quality since 1969

Founded in 1969, Ortea is a leader in the design and manufacture of innovative products and customised solutions for power quality and energy efficiency.

Thanks to a network of offices and dealers on all continents, Ortea products are now installed, maintained and operating in more than 100 countries worldwide.

In line with the strategy of creating a global pole of excellence, the new brand Ortea Next is created in 2019, bringing together the 3 historical product brands - Ortea, Icar and Enersolve - in a single concept of integrated technological offer.

Alongside the standard production, Ortea Next develops and produces equipment that can be customised according to the client's specific requirements with extreme flexibility.

The process of renewal and continuous improvement strengthens Ortea Next's leadership as your ideal partner to meet the challenge of the global energy transition.

GLOBAL PRESENCE

Ortea Next solutions are already present in a large number of countries with positive, long-lasting results

Thanks to a network of offices and distributors that are strategically distributed, local, fast, and competent assistance is guaranteed.



ORTEA NEXT

MADE IN ITALY

Production quality, attention to details, design, and reliability represent the added value of Made in Italy. All the Ortea Next solutions are devised, designed, produced, and assembled in Italy.

EXPERIENCE

Founded in 1969, Ortea Next has accumulated experience and expertise that have contributed to continuous growth over time, until becoming an authoritative and innovative company in designing and producing power quality solutions on an international scale.

RELIABILITY

The certified Company Quality System of Ortea Next guarantees the reliability and longevity of the whole range of products, each of which is strictly controlled and tested.

CUSTOMIZED SOLUTIONS

In addition to standard production, Ortea Next is able to develop and produce complete and integrated solutions based on the specific needs of each client with extreme flexibility.

Ortea Next is always at your service to evaluate projects and study customised solutions, assisting and supporting the client at each stage of development.

QUALITY

Ortea Next's certified Company Quality System guarantees that all the production stages are controlled, from the verification of components to the choice of the most suitable packaging depending on the kind of transport.

RESEARCH & DEVELOPMENT

To ensure innovative solutions, Ortea Next continuously collaborates with universities, institutions, and technological partners in researching and developing new products and reliable technologies.

EXPERTISE

The experience and expertise of the Ortea Next technicians assist the customer both in the design and service stage, ensuring solidity and reliability in researching the best solution.

CUSTOMER CENTRIC

Listening to the customer and their requirements allows Ortea Next to continuously improve the service level offered.



CERTIFIED QUALITY

The conviction that product quality and customer satisfaction must be the main requirements of a modern company has led to the adoption of a certified Company Quality System

After having obtained the first ISO 9001 certification in 1996, today our Company Quality System is certified by Lloyd's Register in compliance with the main standards:

- ISO9001 Quality management system
- ISO14001 Environmental management system
- ISO45001 Occupational health and safety management system

This means that Ortea Next guarantees optimised performance in terms of the internal management of processes, engagement on environmental issues, and attention to occupational health and safety

POWER QUALITY SOLUTIONS

Paying little attention to the issue of power quality causes problems and damage to equipment and production processes

Ortea Next offers a complete range of integrated products and solutions for power quality and energy efficiency, thanks to the synergy between the Ortea Next brands, Ortea, Icar, Enersolve, and Powersines.

VOLTAGE VARIATION



VOLTAGE STABILIZERS

SAGs / DIPS



SAG COMPENSATORS

UNPROTECTED LOADS



LV TRANSFORMERS AND REACTORS

EXCESSIVE REACTIVE POWER



PFC SYSTEMS

HARMONIC POLLUTION



ACTIVE HARMONIC FILTERS

WASTE OF ENERGY



ENERGY EFFICIENCY
SMART DEVICES

WASTE OF ENERGY



ENERGY SAVING
VOLTAGE OPTIMIZERS



THE PROBLEM

Loads operated by electronic devices are increasingly adopted in more and more industrial and commercial applications such as: variable speed drives, rectifiers, welding machines, power electronics, non-filament lighting, presses, furnaces, etc)

These loads generate waveform distortions and, in particular, voltage and current harmonics, where the latter are the more dangerous.

This generate a series of problems, such as:

- Early aging of the components due to thermal and / or mechanical stress.
- Undue tripping of circuit breakers.
- Breakage of electronic boards.
- Malfunctions of sensitive equipment (eg computers, numerically controlled machines).
- UPS reliability issues.
- Damage to PFC and capacitive parts, etc.

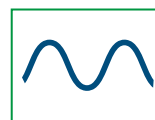
Substantial level of current harmonic distortion might turn into heavy voltage harmonic distortion, which are magnifying the above problems.

THE SOLUTION

ACTIVEmatic FA40 active filters are the solution to all these problems

While adopting a properly selected FA40 ACTIVEmatic, current and voltage harmonic distortion will dramatically reduce, and the sensitive loads will be prevented from the related troubles.

WHAT AN ACTIVE FILTER CAN DO?



Harmonic current compensation



Reactive power compensation



Load balancing



Flicker compensation

Modular design allows future expansion: up to 5 module of 60A in each cabinet



MAIN FEATURES

ACTIVEmatic FA40 active harmonic filter is a solid state power converter which measures the harmonics current generated by the non-linear load. It generates opposite phase shifted harmonics current of the same amplitude, and so it cancels the loads harmonic current and then obtains a sinusoidal current in the supply side, also improving power factor and compensating unbalanced currents.

Harmonic compensation
Up to 50th harmonic, individually selectable.

Modular system extendable
Permits low life cycle costs and flexibility (Available from 60A to 600A) .

Easy installation & commissioning
Touch screen interface with installation assistant.

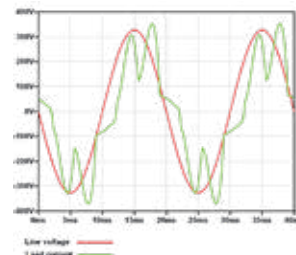
Highest performance:
Reaction time < 21 μ s, very fast steady state time < 300 μ s.

Less power dissipation
Due to 3 level NPC topology: low loss < 15 W att / Amp.

Flicker compensation

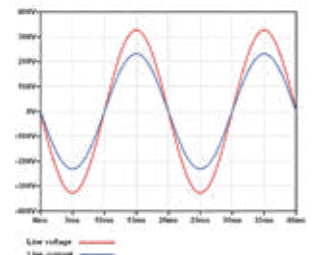
WITHOUT ACTIVE FILTER ACTIVEmatic FA40

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



WITH ACTIVE FILTER ACTIVEmatic FA40

Harmonic oscillations are actively compensated.





ADVANTAGES OF 3-LEVEL NPC TOPOLOGY

The ACTIVEmatic FA40 series range operates on the basis of a 3-level Neutral-Point-Clamped (NPC) topology circuit

This topology can produce three voltage levels at the output: the DC bus plus voltage, zero voltage and DC bus negative voltage. The two-level topology can only connect the output to either the plus bus or the negative bus.

Main advantages of the 3-level NPC topology:

- **Lower losses:** only half of the voltage has to be switched, thus reducing the switching losses in the transistor. Three-level solutions are characterized by reduced circuit losses and higher efficiency.
- **Smaller output current ripple:** the NPC 3-level topology has a lower ripple in the output current and half of the output voltage transient thanks to a higher quality output voltage. This improves performance and reduces the internal filter requirement.

APPLICATION FIELDS

As the Power Electronic operated loads are widely used in any field of energy consumption active harmonic filters are an excellent solution to solve Power Quality problems

The flexibility of ACTIVEmatic FA40 compensation allows their selection and implementation even at the design stage, without knowing the actual load profiles.

ACTIVEmatic can also efficiently compensate harmonic currents along with other Power Quality devices, such as Power Factor Correction Banks and Voltage Stabilisers.

Applications:

- Variable Speed Drives
- (UPSs) Uninterrupted Power Supplies
- Building automation
- Welding
- Tunnel ventilation
- Data centers
- Marine propulsion
- Large elevators and cranes
- Oil and gas
- Wind turbines
- Paper mills
- Steel industry
- Cement industry
- Automotive industry
- Water treatment.
- Research laboratories
- Hotels and shopping centers

STANDARDS

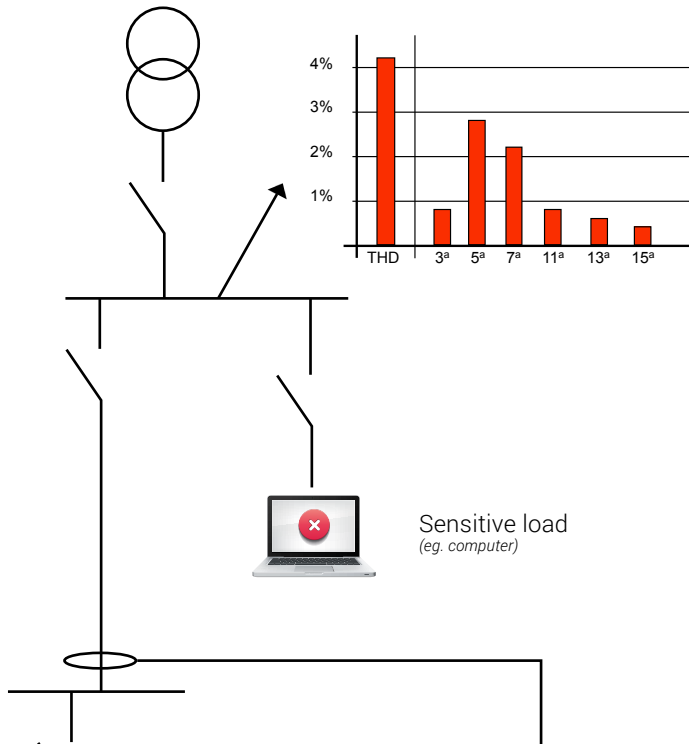
ACTIVEmatic FA40 active filters standards:

- EN 61000-2-2
- EN 61000-2-4
- EN 61000-3-2
- EN 61000-3-12
- EN 61000-3-3
- IEEE STD 519-2014

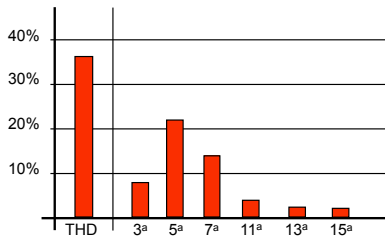


WITHOUT ACTIVEmatic FA40

Sensitive load voltage distortion.



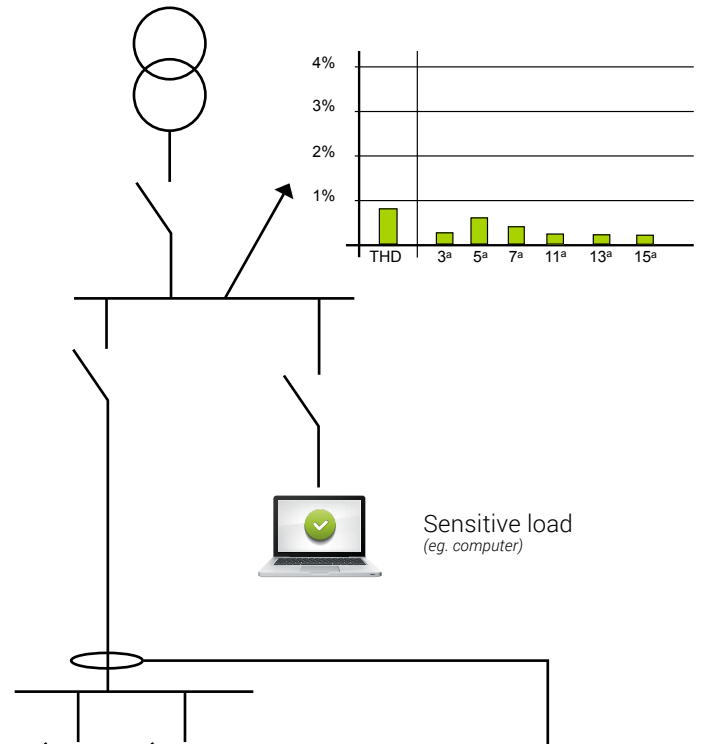
Current distortion due to non-linear load



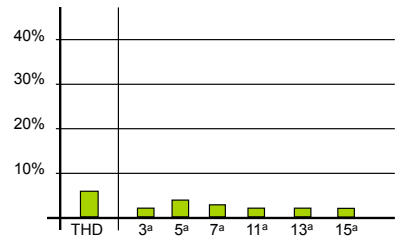
Non-linear load
(eg. welding machine, crane)

WITH ACTIVEmatic FA40

Residual voltage distortion.



Residual current distortion with active filter



ACTIVEmatic FA40

Non-linear load
(eg. welding machine, crane)

ACTIVEmatic FA40: technical characteristics



Main voltage:	Ue=200V - 480V ± 10%
Rated frequency:	50Hz / 60 Hz ± 3Hz
System input / number of phases:	3 phases, 3 wires or 3 phases, 4 wires
Main network distribution:	TN or TT
Harmonic compensation:	up to 50°, individually selectable
Reactive power factor compensation cosφ:	from 0.7 inductive to 0.7 capacitive
Dynamic load balancing between phases:	prevents neutral overloading
Rated current:	60 A for each module
Parallel units:	up to 5 in the same cabinet, 300 A total. Possibility of operation of several units in parallel.
Response time:	< 200µs
Overload capability:	2.5 In (x 10ms)
Cooling:	air cooled system
Ambient temperature:	-10°C to +45°C full performance, derating up to 55°C
Relative Humidity:	<95%, non condensing
Altitude:	2000 m, 4000 m max with derating
Switching frequency:	24 kHz
Inverter topology:	3 levels IGBT switch for low losses
Current limitation:	nominal current
Highest safety and reliability:	including protections against overload, shortcircuit, overheating, overvoltage and undervoltage
Grid resonancy detection:	with blocking resonancy currents
Current transformers:	n° 3 rated from 100A/1A to 2500A/1A (not supplied)
Protection degree:	IP32 for floor mount cabinet, IP 20 for wall mount version. IP 54 optional for floor mount
User interface:	7" display touch screen unit for commissioning and monitoring. Includes Ethernet interface
Certificates:	CE, ROHS
Cabinet colour:	RAL 7035

Part number	Description	Compensation current			Voltage (50-60Hz)	Losses		Weight
		Wires	Phase	Neutral		Full load	Stand by	
		[Nr.]	[A]	[A]	[V]	[W]	[W]	[kg]

Wall-mounted version

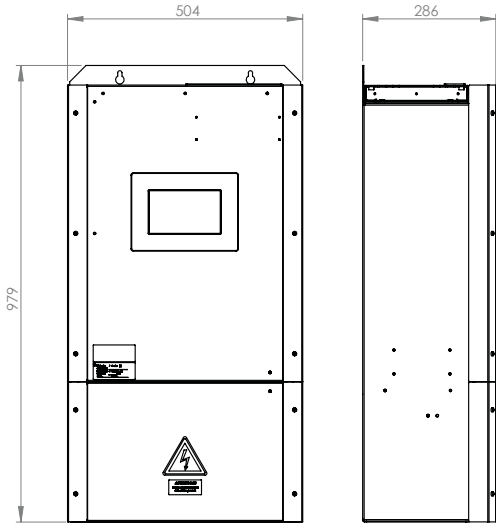
FA43W060XXA0000	ACTIVEmatic FA43 W 60A	3	60	–	200V ... 480V (±10%)	900	50	96
FA43W120XXA0000	ACTIVEmatic FA43 W 120A	3	120	–	200V ... 480V (±10%)	1800	100	160
FA44W060XXA0000	ACTIVEmatic FA44 W 60A	4	60	180	200V ... 415V (±10%)	900	50	96
FA44W120XXA0000	ACTIVEmatic FA44 W 120A	4	120	360	200V ... 415V (±10%)	1800	100	160

Floor-mounted version

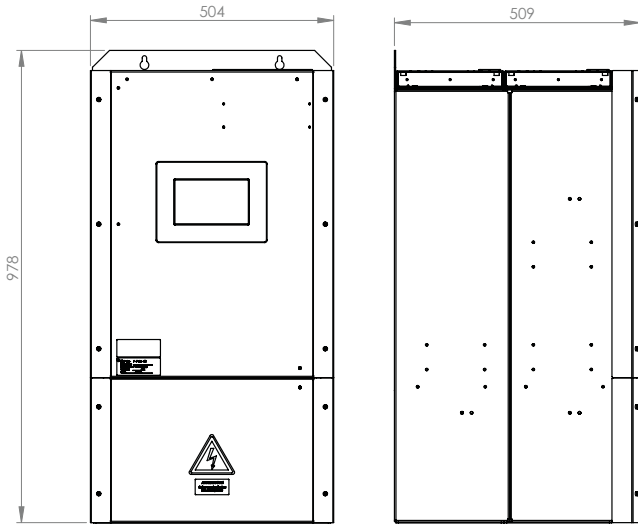
FA43F060XXA0001	ACTIVEmatic FA43 F 60A	3	60	–	200V ... 480V (±10%)	900	50	95
FA43F120XXA0001	ACTIVEmatic FA43 F 120A	3	120	–	200V ... 480V (±10%)	1800	100	158
FA43F180XXA0001	ACTIVEmatic FA43 F 180A	3	180	–	200V ... 480V (±10%)	2700	150	410
FA43F240XXA0001	ACTIVEmatic FA43 F 240A	3	240	–	200V ... 480V (±10%)	3600	200	470
FA43F300XXA0001	ACTIVEmatic FA43 F 300A	3	300	–	200V ... 480V (±10%)	4500	250	530
FA44F060XXA0001	ACTIVEmatic FA44 F 60A	4	60	180	200V ... 415V (±10%)	900	50	96
FA44F120XXA0001	ACTIVEmatic FA44 F 120A	4	120	360	200V ... 415V (±10%)	1800	100	160
FA44F180XXA0001	ACTIVEmatic FA44 F 180A	4	180	540	200V ... 415V (±10%)	2700	150	413
FA44F240XXA0001	ACTIVEmatic FA44 F 240A	4	240	720	200V ... 415V (±10%)	3600	200	474
FA44F300XXA0001	ACTIVEmatic FA44 F 300A	4	300	900	200V ... 415V (±10%)	4500	250	535

DRAWINGS

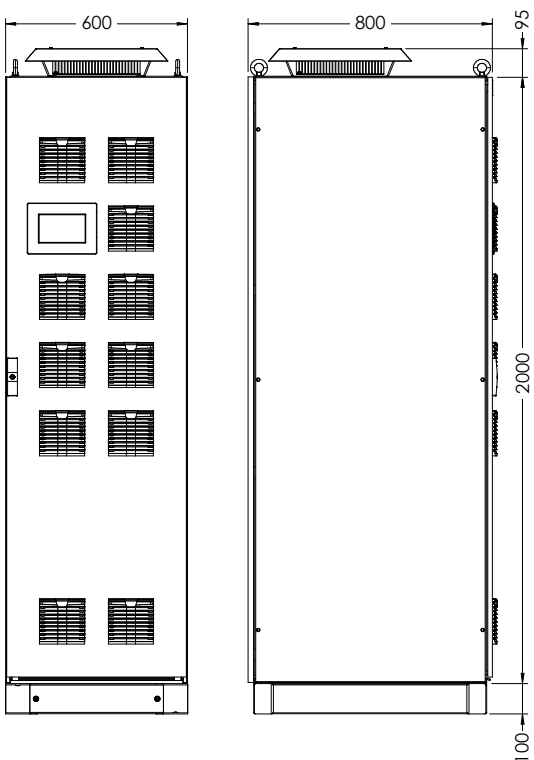
ACTIVEmatic wall mounted 60A



ACTIVEmatic wall mounted 120A



ACTIVEmatic floor mounted



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