



OPTI *net*[®]
power quality



three-phase
10-6000A

Standard features

Voltage stabilisation	Independent phase control
Selectable output voltage*	380-400-415V
Output voltage accuracy	±0,5%
Frequency	50Hz ±5% or 60Hz ±5%
Admitted load variation	Up to 100%
Admitted load imbalance	100%
Cooling	Natural air ventilation. From 35°C aided with fans
Ambient temperature	-25/+45°C
Storage temperature	-25/+60°C
Max relative humidity	95% (non condensing)
Admitted overload	200% 2 min.
Harmonic distortion	None introduced
Colour	RAL 7035
Protection degree	IP21
Instrumentation	From 10A to 2500A digital multimeter from 3000A 10" touch panel (multilingual)
Installation	Indoor
Overvoltage protection	<ul style="list-style-type: none"> - Class I input surge arrestors** (standard from 3000A) - Class II output surge arrestor** (standard from 90A) - Optimal voltage return through supercapacitors - in case of blackout (from 160A)

* The output voltage can be adjusted by choosing **one** of the indicated values.

Such choice sets the new nominal value as a reference for all the stabiliser parameters.

** Optional.

Accessories

Interrupting devices
Load protection against over/undervoltage
Manual by-pass line
Total protection kit
Input isolating transformer
Integrated automatic power factor correction system
SPD surge arrestor
EMI/RFI filters
Neutral point reactor
IP54 protection degree for indoor and outdoor installation

All ORTEA stabilisers are designed and built in compliance with the Low Voltage and Electromagnetic Compatibility European Directives with regard to the CE marking requirements. ORTEA products are built with suitable quality components and that the manufacturing process is constantly verified in accordance with the Quality Control Plans which the Company applies in compliance with the ISO 9001:2015 Standards. The commitment towards environmental issues and safety at work issues is guaranteed by the certification of the Management System according to the ISO14001:2015 and OHSAS18001:2007 Standards. In order to obtain better performance, the products described in the present document can be altered by the Company at any date and without prior notice. Technical data and descriptions do not hold therefore any contractual value.





OPTInet has been specifically designed to meet the ever increasing **power quality** issues that can be easily found in a wide range of industrial applications.

OPTInet combines the established and consolidated characteristics proper of ORTEA voltage stabilisers with features that enable the achievement of **energy saving** and **power quality** improvement. One of the factors that most affect energy saving is given by the fact that electrical appliances are usually designed to operate with an input voltage included in range rather than just one nominal voltage. Nevertheless, supplying a device a voltage **higher than the rated one** implies **higher consumption** and decrease of the expected life.

For example, supplying resistive loads 240V instead of 230V implies approximately 10% increase in the power consumption

This situation can be found worldwide due to the fact that several distribution systems are rated for a **voltage higher than 400V** (United Kingdom, Australia, parts of India, and so on): OPTInet provide with a practical and efficient answer to such issue.

Furthermore, higher supplying voltage might induce problems in magnetic components (possibility of magnetic core saturation).

Other factors such as proximity to power plants or distribution stations and voltage supplied at high level to cover the far end of distribution lines might affect performance of the supplied loads and energy bills.

In order to **optimise energy consumption**, the first step is a **load survey** performed by a qualified technician aiming at assessing the existing situation, deciding what steps need to be taken and **estimating the potential energy savings**. The survey is made necessary by the fact that not all loads are voltage-sensitive.

To sum up, the main parameters that allow for the estimation of the energy saving are:

- Mains voltage different from the load nominal one: the higher the difference, the better the energy saving.
- Level of load sensitivity to voltage variations.

An accurate analysis shall allow for the **best solution** in terms of design and rating. In some cases, it could be more sensible and economical to install an optimiser only for specific types of loads.

OPTInet is specifically designed to allow the adjustment of the voltage received from the mains and bring it back to the value for which the load has been built.

OPTInet optimises the load performance, thus obtaining **lower consumption, energy saving, cost reduction** and longer life expectancy.

Type of load sensitivity to the voltage variation

●	Incandescent, fluorescent and discharge lamps	Consumed power is in this case directly proportional to the square of the supply voltage and the load can be defined as voltage dependant. Using an optimiser can extend the expected life of the load by preventing the supplying voltage from being higher than the nominal one.
●	LED lamps	No advantage with these lamps due to the fact that they are supplied a constant voltage.
●	Asynchronous motor	Low rating motors (typically under 20/25kW), widely spread at a level both domestic and industrial, are considered as voltage dependant.
●	Inverter driven asynchronous motors	If the motor is driven by an inverter (speed electronic control) then it becomes voltage independent.
●	Production lines	Usually, voltage dependant loads (low rating motors and heating systems) are mixed with voltage independent loads (electronic devices). Only a careful investigation can establish the energy savings entity. A typical application is provided by the refrigerating banks used in supermarkets, made of combination of small motors directly fed by electronic units.
●	Electronic devices	Small equipment such as computers, office machines and telecom systems are generally fed via power supplies, which are insensitive to voltage variation.

● a little sensitive to voltage variation / ● sensitive to voltage variation



Energy saving

Load voltage optimization ending in performance improvement, increase of the equipment life expectancy and overall cost reduction.



Power Quality

Continuous voltage monitoring and regulation to a stable value aimed at providing for the optimum supply protected from potential electromagnetic and radio-frequency noise.



Long life

Ortea system voltage regulator with **rollers** (without brushes, which are subject to heavy wear & tear). **Columnar voltage regulator** make possible to achieve **high ratings** (up to 6000kVA) and a solid and reliable construction



Technology

Control and stabilisation, performed on the **true RMS** value, are based on two **two-way DSP-microprocessor** operating with a software specifically developed for Ortea and under the supervision provided by a third **microprocessor (bodyguard)**. **Parameters** and reference voltage can be **set** via a **PC**, thus allowing for solving any problems related to voltage stability directly in the field.
Independent regulation on each phase.



Type	Nominal current	Rating	Input voltage range	Efficiency	Adjustable Speed	Cabinet	Weight
	[A]	[kVA]	[V]	[%]	[ms/V]	Type	[kg]

Input voltage variation range **-0%/+15%** (the values listed in the table are referred to 415V nominal voltage)

OPTInet 10	10	7	400-460	>97	16	22	90
OPTInet 20	20	15	400-460	>97	16	22	100
OPTInet 30	30	22	400-460	>97	16	22	110
OPTInet 40	40	30	400-460	>97	16	23	155
OPTInet 60	60	45	400-460	>97	16	23	180
OPTInet 90	90	65	400-460	>97	16	23	200
OPTInet 125	125	90	400-460	>97	16	31	320
OPTInet 160	160	115	400-460	>98	18	54	430
OPTInet 200	200	145	400-460	>98	18	54	490
OPTInet 260	260	185	400-460	>98	18	54	580
OPTInet 300	300	215	400-460	>98	18	55	710
OPTInet 350	350	250	400-460	>98	18	55	760
OPTInet 400	400	290	400-460	>98	18	55	850
OPTInet 450	450	325	400-460	>98	18	55	950
OPTInet 500	500	360	400-460	>98	18	55	1000
OPTInet 600	600	430	400-460	>98	18	55	1100
OPTInet 700	700	500	400-460	>98	18	55	1200
OPTInet 800	800	575	400-460	>98	18	55	1300
OPTInet 1000	1000	720	400-460	>98	18	55	1400
OPTInet 1250	1250	900	400-460	>98	18	67	1600
OPTInet 1600	1600	1150	400-460	>98	18	62	2000
OPTInet 2000	2000	1450	400-460	>98	18	63	2200
OPTInet 2500	2500	1800	400-460	>98	18	64	2400
OPTInet 3000	3000	2200	400-460	>98	24	70	4000
OPTInet 4000	4000	2900	400-460	>98	24	70	4300
OPTInet 5000	5000	3600	400-460	>98	30	80	6000
OPTInet 6000	6000	4300	400-460	>98	30	80	7300