

DVS
Digital Voltage Stabiliser
Electromechanical

ORION_{PLUS}

three-phase
30-1250kVA





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ORION Plus stabilisers can be chosen to match different ranges of input voltage fluctuation. In the $\pm 15\%$ / $\pm 20\%$ and $\pm 25\%$ / $\pm 30\%$ types, the change of input range is obtained through different internal connections.

They are housed in **modular cabinets** suitable for any industrial environment and able to tolerate mechanical stress that may occur during transport and installation.

The ORION Plus voltage stabilisers **regulate the output voltage independently on each phase**. Similarly to the Orion stabilisers, the stabilisers can supply any **single-phase, bi-phase** and **three-phase** load even in case of and up to 100% unbalanced load current and asymmetrical mains distribution.

In this configuration, the presence of the **neutral wire is required**. The stabiliser can also operate without neutral wire by adding a device able to generate it (D/zN or D /yn isolating transformer or neutral point reactor).

The stabilisers are cooled via **natural air ventilation**, assisted by extracting fans when the cabinet internal temperature exceeds 45°C).

The measuring instrumentation is incorporated in a control panel on the cabinet door and consists of **two multi-task digital line analysers**. Such instruments are able to provide with information regarding the status of the lines upstream and downstream the voltage stabiliser such as phase and linked voltages, current, power factor, active power, apparent power, reactive power, etc.

The operating status of the stabiliser can be easily **monitored** by means of the LED interface on the front panel, which displays all the **information** regarding the operating of the three phases and the possible alarms. LED lights signal 'power on', reaching of voltage regulation limits and direction of voltage regulation (increase/decrease). **Alarms** for minimum and maximum voltages, maximum current, overtemperature and ventilation failure are also indicated. The alarm indicators are accompanied by an acoustic alarm.

- Up to 250kVA $\pm 15\%$, an **automatic circuit breaker** is mounted on the regulation circuit to protect against overload and short circuit on the voltage regulator.

- From 300kVA $\pm 15\%$, an **electronic voltage regulator protection system** activates in case of overload on the voltage regulator. In such condition, the load supply is not interrupted, but the stabiliser output voltage is automatically set to the lower between the mains voltage and the pre-set output voltage.

The **service continuity is guaranteed**, although the voltage is not stabilised. When the overload condition ceases to exist, the stabiliser switches automatically back to regular functioning.

The auxiliary circuits are protected by **fuses**.

The control logic, performed on the **true RMS** voltage, is based on the 2-way DSP microprocessor. The unit parameters and the output voltage reference can be set by using a personal computer, thus allowing for dealing directly in the field with any problems related to voltage stability.

All ORION Plus stabilisers are provided with **Class II SPD surge arrestors**.



All ORTEA stabilisers are designed and built in compliance with the 2006/95/EEC (Low Voltage) and 2004/108/EEC (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 9001:2008 Standards. The commitment towards environmental issues and safety at work matters is guaranteed by the certification of the Management System according to the ISO 14001:2004 and OHSAS 18001:2007 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 hold therefore any contractual value.



Standard features

Voltage stabilisation	independent phase control
Selectable output voltage	from 210V to 255V (L-N) / from 360V to 440V (L-L)
Frequency	50/60Hz $\pm 5\%$
Admitted load variation	Up to 100%
Admitted load imbalance	100%
Cooling	Natural ventilation (aided with fans over 45°)
Ambient temperature	-25/+45°C
Storage temperature	-25/+60°C
Max relative humidity	95%
Admitted overload	200% 2 min.
Harmonic distortion	None introduced
Colour	RAL 7035
Protection degree	IP21
Instrumentation	Input & output digital multimeter
Installation	Indoor
Overvoltage protection	– Output class II surge arrestor – Soft start through supercapacitors in case of blackout

Optional features

Interrupting devices
Over/undervoltage protection
Manual bypass line
Total protection kit
Input isolating transformer
Integrated automatic power factor correction system
SPD surge arrestors
EMI/RFI filters
Neutral point reactors
IP54 protection degree for indoor and outdoor



WIDE RANGE



Different standard range of input voltage fluctuation:
symmetrical: **±15%, ±20%, ±25%, ±30%** (other on request)
asymmetrical: **+15%/-25%, +15%/-45%** (other on request)

Output voltage accuracy: **±0.5%**.

TECHNOLOGY



The control logic, performed on the **true RMS value**, is based on the **2-way DSP microprocessor** with Ortea dedicated firmware.

The unit **parameters** and the output voltage can be **set by using a personal computer**, thus allowing for dealing directly in the field.
Independent regulation on each phase.

LONG LIFE



Ortea system voltage regulator with **rollers**, no sliding (consuming) parts.
The voltage regulator could be **toroidal** or **columnar** (depends on the power).

PROTECTION



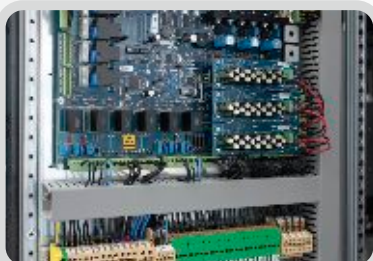
Up to 250kVA ±15%:

An **automatic circuit breaker** is mounted on the regulation circuit to protect against overload and short circuit on the voltage regulator.

The auxiliary circuit is protected by **fuses**.

Overvoltage protection: Class II output **surge arrester**.

PROTECTION



From 300kVA ±15%:

An **electronic voltage regulator protection system** activates in case of overload on the voltage regulator. In such condition, the **load supply is not interrupted**.

The auxiliary circuit is protected by **fuses**.

Overvoltage protection: Class II output **surge arrester**.

PROTECTION



Output voltage reset to the minimum value in case of blackout by means of **supercapacitors** banks in order to ensure the correct shutdown.

DISPLAY



The digital measuring instrumentation consist of two (input & output) **multi-task digital line analyser**.

Such instruments are able to provide with information regarding the status of the lines, upstream and downstream the voltage stabiliser, such as phase and linked voltages, current, power factor, active and apparent power, reactive power, etc.

MONITORED



The **operating status** of the stabiliser can be easily **monitored** by means of the LED interface on the front panel, which display all the **information** and **alarms**.

QUALITY



In order to provide with the **best quality**, the productive process includes intermediate checks and a thorough **final test for each** voltage stabiliser.

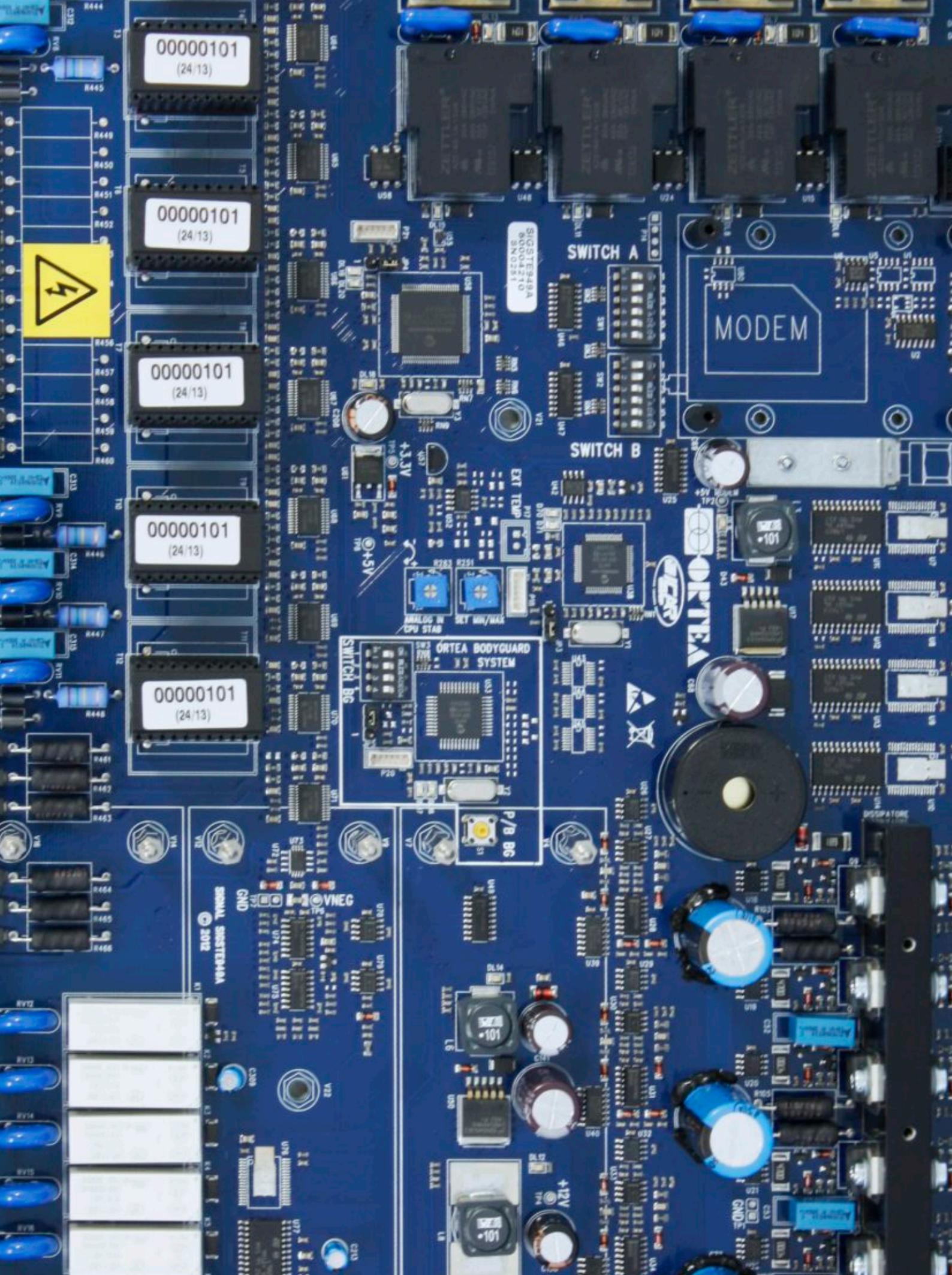
The implemented quality system ensures that all the production steps are controlled, from component verification at reception to the choice of the most suitable packaging depending on the type of transportation.

CERTIFICATION



Approved managing system:

- **ISO9001:2008**
- **ISO14001:2004**
- **OHSAS18001:2007**





APPROVED MANAGING SYSTEM



ISO9001



ISO14001



OHSAS18001

Founded in 1969, ORTEA SpA is a leading company in manufacturing and engineering voltage stabilisers and magnetic components.

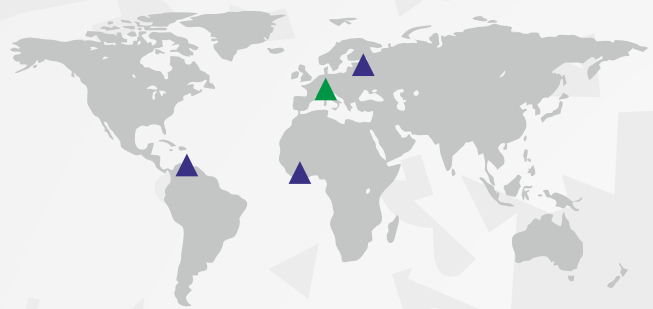
Over forty years in the business and ongoing technical research have made of ORTEA a competitive and technologically advanced company. Close co-operation between design, production and marketing enables to meet the requirements of a constantly growing number of customers.

In 1996 ORTEA joined ICAR Group, made of Italian and European industrial units specialised in manufacturing capacitors and power factor correction systems.

Beside standard production, ORTEA can be extremely flexible in developing and manufacturing special equipment according to User's specification. All this thanks to the experience gained over many years of applied technological development. Such development includes IT tools that enable the technical staff to elaborate electrical and mechanical designs for each «custom product» on a quick and cost-effective basis.

ORTEA is well established in the global market.

Thanks to strategically positioned offices and distributors and efficient commercial relations, ORTEA's products are installed and working in a large number of countries.



▲ ORTEA headquarters (Italy)

▲ ORTEA branches (Russia, Ivory Coast, Venezuela)

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