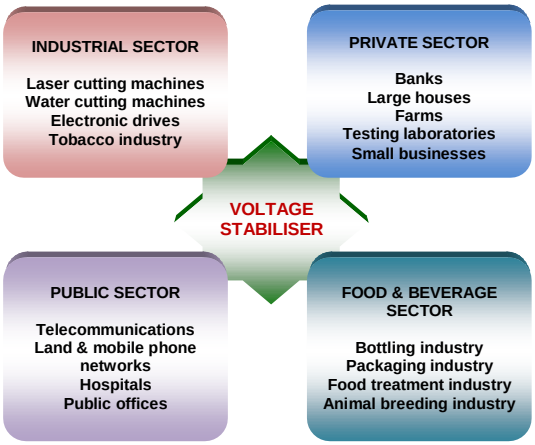
DATA SHEET

ORION PLUS: 3-ph. Voltage Stabiliser

Why choose a voltage stabiliser

*The increase of voltage sensitive equipment **requires** means able to guarantee the supply of high quality voltage, independently from variations in the mains. Loss of data, defective products, security failure, machinery faults and inaccurate information are only a few examples of possible problems due to unstable supply.*
*The voltage stabiliser has proved to be an efficient **solution** in order to prevent from potential damages due to input voltage fluctuation. Installing a voltage stabiliser is often the solution to ensure continuity and quality of production.*
A typical voltage stabiliser is able to respond to changes in the voltage level on the input line.
Sags might be due to undersized distribution lines, connection of large loads to the network, ground faults, etc.
Surges might be generated by disconnection of large loads, increased voltage at the generating plant, atmospheric events, etc.
The duration of such phenomena depends on their cause and is not easily predictable.
Sags are generally more common especially where the distribution is not wide and efficient.

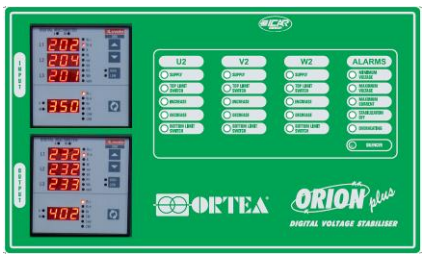
Application



Characteristics

The stabilisers are designed and built in compliance with the European Directives concerning CE marking 2006/95/EEC (Low Voltage Directive) and 2004/EEC (Electromagnetic Compatibility Directive) and can be used in A and B environments according to IEC439.1.
***ORION PLUS** are built in modular cabinets suitable for any industrial environment and able to tolerate all the mechanical stress that may occur during transport and installation.*
The ORION PLUS voltage stabilisers regulate the voltage independently on each phase. Typically, the stabiliser is used in case of unbalanced mains distribution and unbalanced three- or single-phase load distribution. In this situation the presence of the neutral wire is required.
The stabilisers are air cooled (natural convection with cabinet internal temperature lower than 45°C).
The measuring instrumentation is incorporated in a control panel on the cabinet door and consists of two multi-task digital network 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 monitored via a LED interface on the front panel displaying all the information regarding the the three phases' status 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, over-temperature and ventilation failure are signalled on the control panel mounted on the cabinet door. Automatic circuit breakers are provided on the regulation circuit to protect against overload and short circuit on the voltage regulator. The logic control, performed on the true rms voltage, is based on the **2-way DSP microprocessor,** allowing for setting operation by means of a PC connection.*
All ORION PLUS stabilisers are provided with Cl. II SPD surge arrestors.



Main features

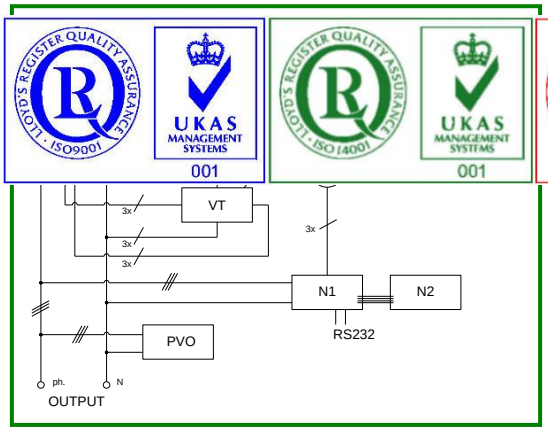
- Power design based on the maximum input current;
- Regulation performed independently on each single phase
- Regulation based on the 'rms voltage' and insensitivity to possible harmonics on the mains;
- Full functionality with load charge variable from 0 to 100%
- Up to 30% harmonic content admitted on the load current.
- Insensitivity to the load power factor
- No generation of noticeable harmonics in the output voltage

Protections and signals

- Motor rotation stop due to regulation reaching the limit switches;
- Motor rotation failure due to short-circuit;
- Motor short-circuit;
- Maximum and minimum line voltage;
- Phase overcurrent;
- Circuit breaker with thermal and magnetic release to protect against overload and short circuit on the voltage regulators.
- Ambient thermostat (set to 60°C) on the control board ;
- Ambient thermostat (set to 45°C) activating the cabinet fans;
l on the auxiliary circuits;
ses (F1-F2) mounted on the control electronic board;
urge protective devices.

nciple

compares the output voltage value to the set one. When riation is too high, the control drives the voltage regulator gearmotor. By doing so the regulator rollers change their position thus varying the voltage drawn and supplied to the buck/boost transformer primary winding. Being the secondary voltage of the buck/boost transformer in phase or in opposition to the supply, the voltage drawn from the regulator is added or subtracted to the mains voltage, thus compensating its variations



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CHARACTERISTICS

RATED POWER		[kVA]
INPUT VARIATION RANGE		[%]
PC SELECTABLE RATED VOLTAGE	360 to 440	[V]
MAX INPUT CURRENT		[A]
OUTPUT CURRENT		[A]
OUTPUT ACCURACY	± 0,5	[%]
FREQUENCY	50/60 ±5%	[Hz]
REGULATION TIME		[msec/V]
EFFICIENCY		[%]
LOSSES		[W]
ADMITTED LOAD VARIATION	0 ➔ 100	[%]
ADMITTED LOAD UNBALANCE	0 ➔ 100	[%]
MAINS WAVEFORM DISTORTION INCREMENT	< 0,2	[%]
ADMITTED OVERLOAD	200% 2min	-
COOLING	AN	-
AMBIENT TEMPERATURE	-25/+45	[°C]
STORAGE TEMPERATURE	-25/+60	[°C]
RELATIVE HUMIDITY	95	[%]
DIMENSIONS [W x D x H]		[mm]
WEIGHT		[kg]
IP PROTECTION	IP 21	-
COLOUR	RAL 7035	-
INSTALLATION	INDOOR	-

Optional features

Maintenance by-pass circuit		[A]
In-built soft-start protection		[A]
Input interrupting device		[A]
Output interrupting device		[A]
Input isolating transformer		[kVA]
Class I SPD		[kA]

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