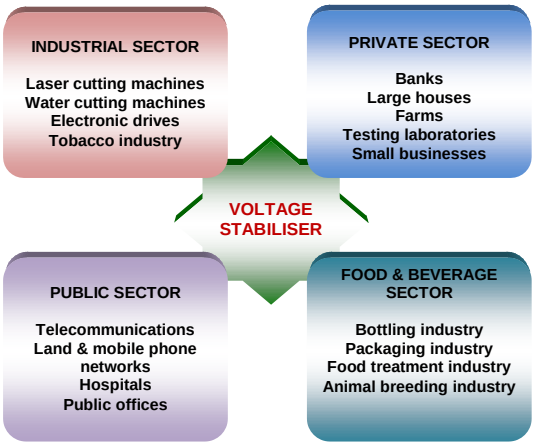
DATA SHEET

ORION Y: 3-ph. Voltage Stabilisers

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.

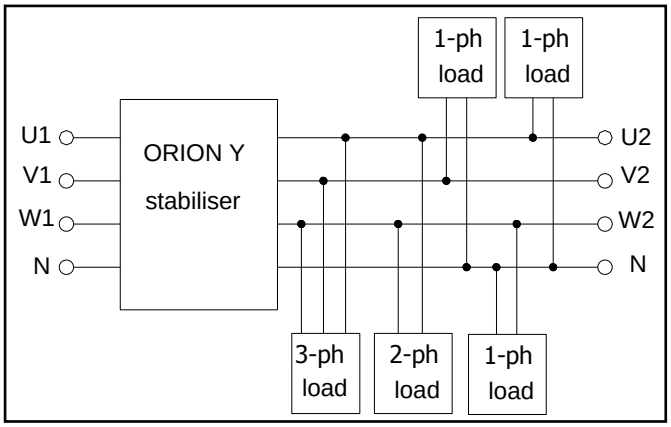
Application



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 Y** stabilisers cover the power rating range between **5kVA and 230kVA** allowing for several input voltage variation percentages within a broad range (from +30% up to -45%).*
The regulation in the ORION Y stabilisers is independent on each phase.
ORION Y stabilisers are used with three-phase loads and single-phase loads with 100% unbalance with unbalance input rated voltage and are suitable even in case of non-symmetric mains
***In this configuration, the voltage stabiliser requires the neutral wire presence.** It can also operate without neutral wire by adding a proper equipment (Δ/Y isolating transformer or neutral inductance).*
The instrumentation is installed on the cabinet door and consists of a multi-task digital network analyser, providing with information on the line downstream the voltage stabiliser (phase and linked voltages, current, power factor, active power, apparent power, reactive power, etc).
Minimum voltage, maximum voltage, internal overheating and overload on the voltage regulator are signalled by an acoustic alarm.
The stabiliser is provided with microprocessor-based logic control.



Main features

- *Power design based on the maximum input current;*
- *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 (top and bottom)*
- *Motor rotation failure due to short-circuit*
- *Maximum and minimum line voltage alarm*
- *PCB thermostat (set to 65°C)*
- *Automatic circuit breaker to protect against overload and short circuit on the voltage regulator*
- *Fuses to protect the auxiliary circuits*

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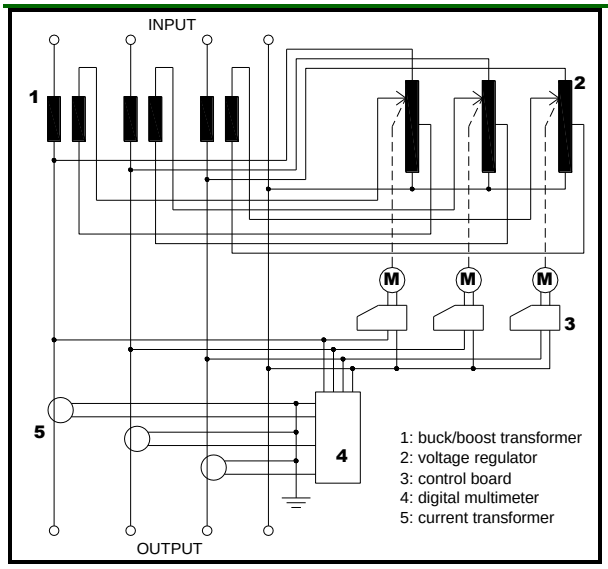

Working principle

The control circuit compares the output voltage value to the set one. When the percentage variation 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.

Rating in relation to the input voltage variation

±15%	±20%	±25%	±30%	-35/+15%	-35/+15%	-45/+15%
5	4	3	2	4	3	2
10	7	4	3	7	4	3
15	10	7	4	10	7	4
20	15	10	7	15	10	7
30	20	15	10	20	15	10
45	30	20	15	30	20	15
60	45	30	20	45	30	20
80	60	45	30	60	45	30
105	80	60	45	80	60	45
135	105	80	60	105	80	60
175	135	105	80	135	105	80
230	175	135	105	175	135	105

Optional features

Maintenance by-pass circuit
In-built soft-start circuit
Input and/or output interrupting device
Input isolating transformer
Out of standard rating and input voltage variation percentage

SHARED CHARACTERISTICS

SELECTABLE RATED VOLTAGE	*380 – 400 - 415*	[V]
OUTPUT ACCURACY	± 0,5	[%]
FREQUENCY	*47 - 65*	[Hz]
ADMITTED LOAD VARIATION	0 ➔ 100	[%]
ADMITTED LOAD UNBALANCE	0 ➔ 100	[%]
MAINS WAVEFORM DISTORTION INCREMENT	< 0,2	[%]
ADMITTED OVERLOAD	100% 2min	-
COOLING	AN	-
AMBIENT TEMPERATURE	-15/+45	[°C]
STORAGE TEMPERATURE	-20/+60	[°C]
RELATIVE HUMIDITY	95	[%]
COLOUR	RAL 7035	-
INSTALLATION	INDOOR	-

SPECIFIC CHARACTERISTICS

INPUT VARIATION RANGE		[%]
RATED POWER		[kVA]
MAX INPUT CURRENT		[A]
RATED OUTPUT CURRENTY		[A]
REGULATION TIME		[msec/V]
EFFICIENCY		[%]
IP PROTECTION		-
DIMENSIONS [WxDxH]		[mm]
WEIGHT		[kg]