

IREM PROPOSAL



MINISTAB STEROSTAB VOLTAGE STABILISERS

IREM Ministab and Sterostab Voltage Stabilisers are the most reliable solution to problems related to voltage variations in the electric network. The electric energy producers generate a correct voltage. However, failures on the distribution lines, atmospheric discharges, continuous load variations and disturbances generated by the users make it impossible to guarantee always a steady voltage within the tolerance bandwidth stipulated in the supply contract. Very often this tolerance is insufficient for more sensitive equipment.

Other times the mains voltage reaches levels that exceed the foreseen rated value by 15, 20 or even 30%. Increasingly, there is a reduction in the Power Quality level of the electrical energy made available to the end user. IREM Ministab and Sterostab voltage stabilisers guarantee users with perfectly regulated voltage.

IREM PROPOSAL

Ministab and Sterostab are registered names of two series of voltage stabilizers that offer a reliable and tested economic solution to inconveniences caused by voltage fluctuations. The use of voltage stabilizers increases the level of power quality and represents a real investment because the elimination of the inconveniences means a reduction in costs and an increase in productivity. Very often it is only necessary to avoid a few minutes machine downtime or just one failure to repay the cost of the voltage stabilizers.

Ministab and Sterostab are particularly suitable for applications that require:

DOWNLOAD POWER QUALITY

Ø

NEWSLETTER

- high reliability. For example they can be installed in areas with difficult access, subject to critical environmental conditions due to cold, high temperatures, humidity, atmospheric discharges;
- capability to compensate wide mains voltage variations. This is a typical requirement of equipment installed in areas that are far from the distribution transformer substation and in fast developing countries;
- high precision of the stabilised voltage. Ideal condition for calibration and inspection stands, electric furnaces, professional lighting equipment;
- voltage stabilization of high power users or with high inrush currents like e.g. motors, air conditioners, compressors, pumps;
- simple and limited maintenance. Very important feature where it is difficult to find qualified personnel for servicing;
- wide range of models. According to the ambient conditions, the voltage stabilizers can be supplied in enclosures with protection degree IP00, IP21, IP54 INDOOR, IP54 OUTDOOR.

COOLING BY NATURAL AIR CONVECTION, FAN-FREE SYSTEM

This is the distinctive characteristic of all IREM voltage stabilisers with protection degree IP21; it dramatically increases the

reliability as the cooling of the magnetic components and the electronic control boards is ensured by natural convection without fans (fafree system). Fans and the relevant filters must be constantly checked, cleaned and periodically replaced.

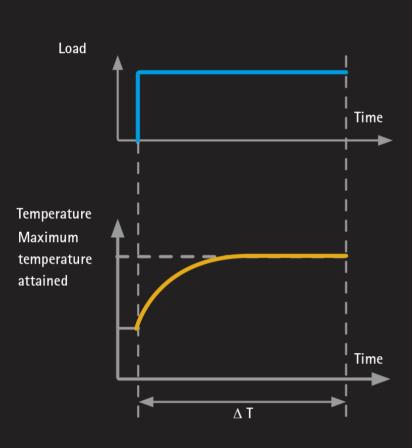
Moreover, the absence of fans avoids sucking of dust which would deposit on the copper tracks reducing the contact surface between the electro-graphite rolls and the voltage transformer tracks. As a consequence, this would cause roughness, sparks and copper smelting, phenomena that in the long run would damage the component and reduce its life expectancy. The pictures clearly show that NO fan is used in IREM voltage variable transformers to cool down the contact point between brushes and turns.

- This is possible thanks to the thermal dissipation being the result of:
- the correct sizing and the high permeability of the magnetic cores;
- the low density of current flowing through the windings of the variable transformers, and consequently the reduced thermal dissipation;
- the square section of the linear variable transformers.

DECLARED POWER ON HEAVY DUTY

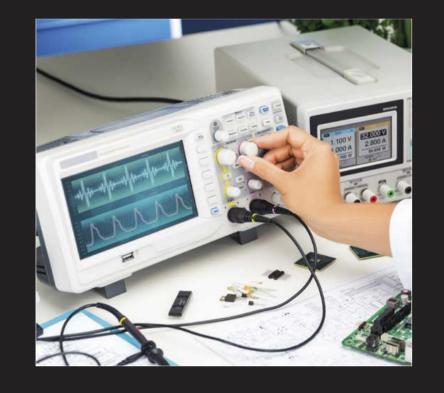


The fundamental parameter of a voltage stabiliser is the nominal power expressed in kVA and indicated in the product name plate. It represents the maximum power that the equipment can deliver. However, the power of a voltage stabilizer must be contextualized with reference to the service class, to the input voltage fluctuations and to the ambient temperature.



THE SERVICE CLASS.

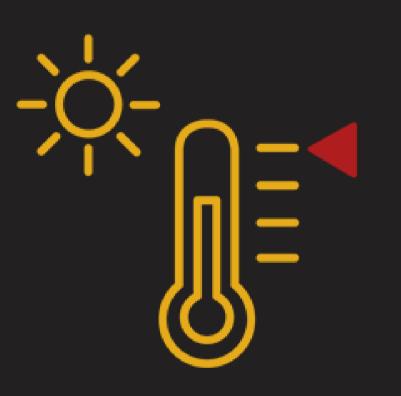
All IREM voltage stabilisers are designed and manufactured to operate in continuous service, intended as the most demanding service at nominal power for unlimited time. In other words: IREM voltage stabilizers are sized to work continuously with 100% duty-cycle and the materials used bear the maximum power expected for unlimited time.



INPUT VOLTAGE FLUCTUATIONS.

A voltage stabiliser is characterized by the ability to compensate for the fluctuations in the mains voltage and to supply the connected load at a constant voltage and close to the nominal value. The most heavy working condition is in presence of the minimum mains voltage in input.

All IREM voltage stabilizers are characterized by the ability to stabilize the output voltage when the mains is in the worst conditions for unlimited time and without any degradation of performance.



THE AMBIENT TEMPERATURE

Electric machines are characterized by energy losses produced during energy transformation, which occur in the form of heat. The cooling of an electric machine occurs through the phenomenon of transmission of the heat produced inside the equipment to an element at a lower temperature.

The most reliable cooling mechanism is when the machine is immersed in the air, at the ambient temperature, without forced ventilation elements (fan-free). The fan-free natural air convection cooling system typical of IREM voltage stabilizers in IP21 version requires that the energy losses are reduced to the minimum value allowed by the technology, using qualified materials and adopting a generous sizing criterion.

MINISTAB

IREM Ministab voltage stabilizers are electromechanical devices with electronic control designed to ensure stabilized powering to single-phase and three-phase loads of small and medium powers.

OPERATION:

IREM Ministab voltage stabilizer is equipped with a control circuit that constantly monitors the line voltage at true voltage (RMS) and compares it with the pre-set voltage value to be kept constant. The architecture of IREM Ministab voltage stabilizer allows to achieve high values of regulation speed and stabilization accuracy.

The choice of adopting the booster configuration for the entire range, avoids the presence of mobile contacts in series to the line, makes the equipment insensitive to the load power factor, prevents the introduction of harmonic distortions and allows to achieve high efficiency levels, resulting in reduced heat dissipation and minimization of operating costs in relation to the benefits obtained.

CHARACTERISTICS:

- Multi range: one model meets 4 levels of compensation and power
- Toroidal variable autotransformer
- Power range: from 1 to 350 kVA
- Compact dimensions: "case" for single-phase M and threephase T models, "tower" for threephase Y models.

Warranty: 5 years

Natural convection: fan-free for IP21 versions.

Heavy duty power: the declared performance is always ensured in the most severe and critical conditions (continuous service at nominal power with minimum input voltage, highest input current and at the declared ambient temperature)

STEROSTAB

IREM Sterostab voltage stabilizers are electromechanical devices with electronic control designed to ensure stabilized powering to single-phase and three-phase loads of high and very high power.

OPERATION:

IREM Sterostab voltage stabiliser is equipped with a control circuit that constantly monitors the line voltage at true voltage (RMS) and compares it with the pre-set voltage value to be kept constant. The architecture of IREM Sterostab voltage stabilizer allows to achieve high values of regulation speed and stabilization accuracy. The choice of adopting the booster configuration for the entire range, avoids the presence of mobile contacts in series to the line, makes the equipment insensitive to the load power factor, prevents the introduction of harmonic distortions and allows to achieve high efficiency levels, resulting in reduced heat dissipation and minimization of operating costs in relation to the benefits obtained.

The internal equalization system of the medium and large power units, which is essential to equalize the currents in the various branches of the regulation system, is of breakdown type therefore without resistive elements characterizing the dissipative distribution system.

CHARACTERISTICS:

- Linear square section variable autotransformer with rolling contacts
- Power range: from 3 to 8000 kVA
- Modular system for high power models to facilitate transport, handling and installation.

Warranty 5 years Natural convection: fan-free for IP21 versions.

Heavy duty power:

the declared performance is always ensured in the most severe and critical conditions (continuous service at nominal power with minimum input voltage, highest input current and at the declared ambient temperature)

MINISTAB – STEROSTAB OVERVIEW

POWER SUPPLY AND PROFESSIONAL USERS

The voltage fluctuations are particularly treacherous interferences since they are not seen and can only be detected by using specific instrumentation. When such interferences are present, the electrical equipment seems to maintain correct operation but disguises serious problems that at times are beyond repair. Even an ordinary light bulb, if overpowered by 10%, continues to give light, but halves its operating life; if underpowered by the same percentage it loses 30% of its brightness. The situation becomes much more serious in the case of voltage variations on more complicated equipment:

- a computer can be damaged or make unpredictable errors;
- a laser cutting machine undergoes changes in the "laser beam mode", resulting in cutting burrs or the shutting off of the beam;
- an electric drive causes undesired changes in the speed of the powered motor and damage to the data storage and power terminals;
- an "electromedical" device gives incorrect results, wastes expensive reagents and loses the samples to be analysed.

VOLTAGE STABILISERS Ministab - Sterostab

LINE CONDITIONERS Ministatic - Steroguard INTEGRATED POWER SUPPLIES AI - AO

ISOLATION TRANSFORMERS



AUTOMENS SYSTEMS P.O.Box 622, Ofankor Accra. Ghana Tel. +233 24461 2469 Email: info@automensys.com



in