IREM Ministab-Sterostab

DISTANCE WITHOUT BOUNDARIES

Electrodynamic voltage stabilisers

Remote Control

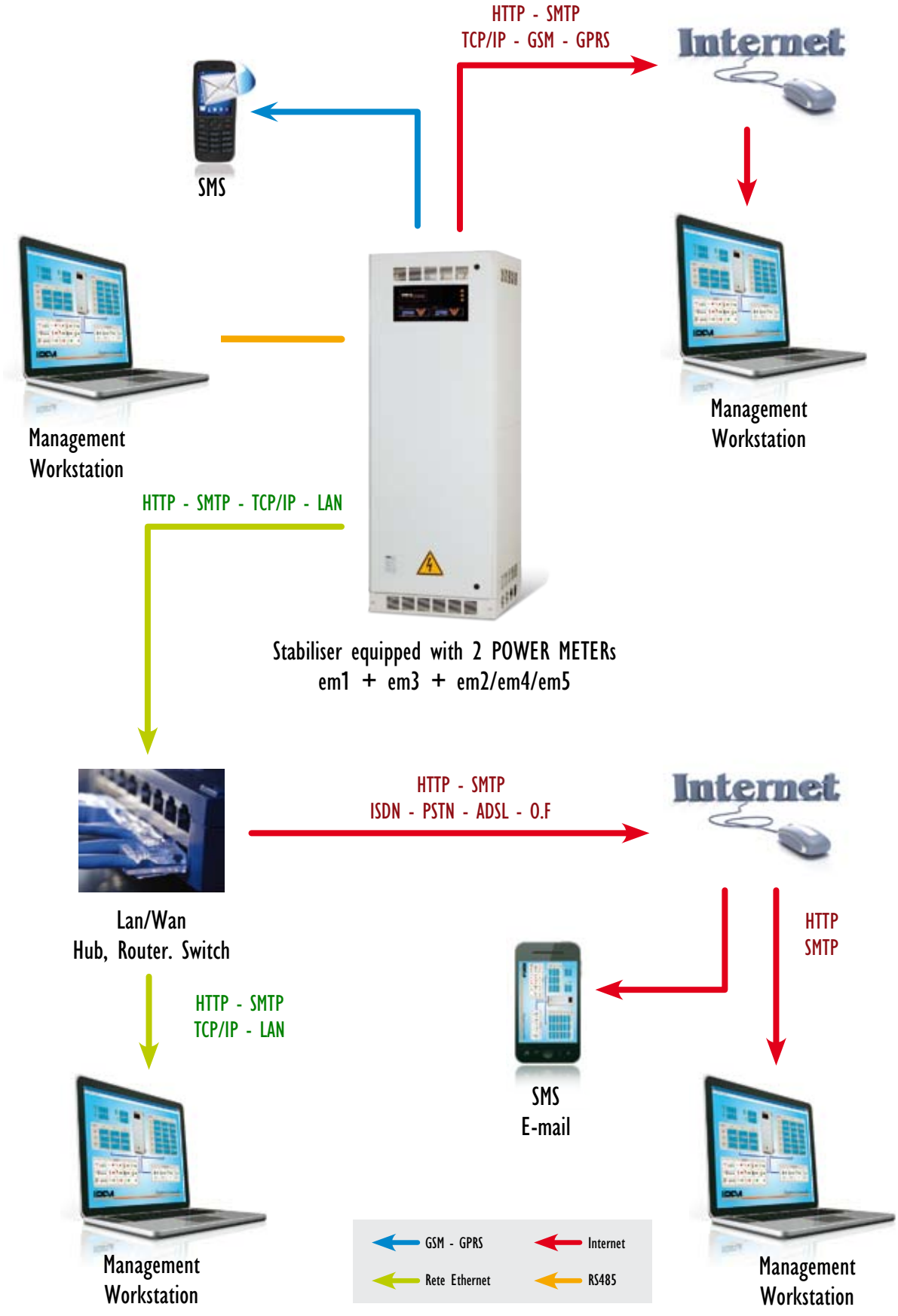
This is an innovative feature for voltage stabilisers which are generally regarded as being an "accessory" to installations and/or machines built to be connected to distribution mains which are presumed to have characteristics of suitable quality.
Until today, whenever the voltage supply was not suitable, a voltage stabiliser was installed. This meant that this equipment, even though essential to the well-functioning of the process, was regarded as an accessory and therefore not integrated into the installation of which it was part. Its functional parameters were not visible in the control centre while all the parameters of other equipment of the installation were kept under constant control.

Therefore it was impossible to prevent important economic damages caused by the interruption of the working process due to particularly unusual powering, load or ambient conditions, or even by wrong connections.
Now, thanks to the use of radio modems, gsm/gprs or phone modems, or the connection via ETHERNET and INTERNET, the stabilisers STEROSTAB and MINISTAB can be equipped with the specific communication module POWER METER. Therefore it is possible to connect them via remote control to a control centre, a cell phone, a tablet or any internet point in order to obtain information in real time or have the filed historical data available.
There are a total of 56 different electrical parameters picked up by the software which are filed and converted into CSV, TXT and EXCEL.
The analysis of the information and the alarm warnings picked up and transferred through POWER METER by means of SMS, E-mail, pup up alert, sound, light and the commutation of contacts, allow to:

- prevent the tripping of automatic protections of the stabiliser which would cause the interruption of the process, or, if these are not available,
- remove the cause of alarm before any damage happens to the loads connected to the stabiliser.

All data and alarms are visible on the stabiliser display and can be downloaded via interface RS485, ETHERNET or GSM.

Communication architecture



VOLTAGE IN- OUT
RMS measurement of the input and output voltage
(phase-to-phase and phase-to-neutral), with an accuracy of 0,5%.

CURRENT IN- OUT
RMS measurements
with an accuracy of 0.5%

COS φ
Power factor measurement on each phase
with an accuracy of 0.5%

ACTIVE POWER
Active power measurement on each phase
with an accuracy of 0.5%

APPARENT POWER
Apparent power measurement on each phase
with an accuracy of 0.5%.

REACTIVE POWER
Reactive power measurement on each phase
with an accuracy of 0.5%.

HARMONIC DISTORTIONS
Harmonic distortions measurement on each phase
with an accuracy of 0.5%.
Harmonics are measured and filed up to the 25th order

VOLTAGE SPIKES
Voltage spikes are detected and filed
with a resolution of 10ms at 50Hz

BLACK OUT
Power failures are detected
with a resolution of 10ms at 50Hz

AMBIENT TEMPERATURE
The ambient temperature around the stabiliser
is measured with an accuracy of 1.5°C

HUMIDITY
The humidity around the stabiliser is measured
with an accuracy of ±2%

INTERNAL TEMPERATURE
The temperature inside the stabiliser is measured
with an accuracy of 1.5°C

CIRCUIT BREAKER STATUS
Indication of the "open/closed" status of a circuit breaker (optional)
present on the stabiliser.

BY-PASS STATUS
Indication of the status of the by-pass (optional)
present on the stabiliser.

STATUS OF EARTH LEAKAGE CIRCUIT BREAKER
Indication of the "open/closed" status of the earth leakage circuit breaker (optional)
present on the stabiliser.

STATUS OF THE AUXILIARY POWER SUPPLY
Indication of the status of the auxiliary
power supply (optional).

INDICATIONS

ALARMS

COMMANDS

BY PASS

Upon entry of the password, it activates the by-pass (if present) excluding the stabiliser from the circuit and powering the load directly from the mains.
This can be used if any kind of alarm should occur, indifferently if caused by the stabiliser or by the load.

INPUT CIRCUIT BREAKER

Upon entry of the password, opens or closes an input circuit breaker (if present).

OUTPUT CIRCUIT BREAKER

Upon entry of the password, opens or closes an output circuit breaker (if present).

SWITCHING TO AN AUXILIARY LINE

Upon entry of the password, it switches the stabiliser to an auxiliary powering line (if present).

SWITCHING TO AN AUXILIARY STABILISER

Upon entry of the password, it switches the load to an auxiliary stabiliser (if present).

HUMIDITY AND HIGH AMBIENT TEMPERATURE

Indicates ambient conditions exceeding the admitted alarm limits. It is necessary to understand and remove the alarm causes as the persistence of these hazardous conditions could damage the stabilizer in case of absence of a specific protection installed.

HIGH INTERNAL TEMPERATURE

Signals a temperature inside the stabiliser exceeding the admitted alarm limits. It is necessary to understand and remove the alarm cause as the persistence of this hazardous condition could damage the stabilizer in case of absence of a specific protection installed.

OVERLOAD Signals a current absorption which exceeds the maximum capacity of the stabiliser. The persistence of this condition would damage the equipment in case of absence of a specific protection installed.

POWER SUPPLY FAILURE

Signals power failure in the input of the stabiliser.

HARMONIC DISTORTIONS Signals the presence of harmonic distortions which exceed the alarm limits.

MALFUNCTIONING OF THE COOLING SYSTEM

Signals the malfunctioning of fans or air conditioner if present on the stabiliser. It is important to repair the cooling system quickly as a persistence of high temperature inside the stabiliser would cause damage.

SURGE ARRESTER OUT OF ORDER

Signals that the protection against voltage spikes has to be replaced.

PHASE FAILURE Signals the missing of one or more phases in the input. The persistence of this situation could damage the load.

INPUT VOLTAGE OUT OF RANGE

Signals the presence of input voltage out of the permitted range of the stabiliser. The persistence of this situation could damage the load.

OUTPUT VOLTAGE OUT OF RANGE

Signals the presence of output voltage with minor precision to what is expected. It indicates the possible malfunctioning of the stabiliser or the presence of voltage variations on the line which exceed the capacity of regulation by the stabiliser. The persistence of this situation could damage the loads.

OPEN DOOR(S) Signals that the door(s) is/are open. If the opening of the door(s) is not performed by an authorized person it is necessary to take immediate action in order to prevent accidents to people and/or damage or robbery on the stabiliser.

BY-PASS IN ACTION Signals that the stabiliser is excluded from the circuit and that the load is powered directly from the mains. Should the by-pass has switched into action automatically, it is necessary to find and remove the cause.

CIRCUIT BREAKER OFF Signals that the input/output circuit breaker has been opened manually or automatically. In case of the latter it is necessary to find and remove the cause which led to the circuit breaker tripping.

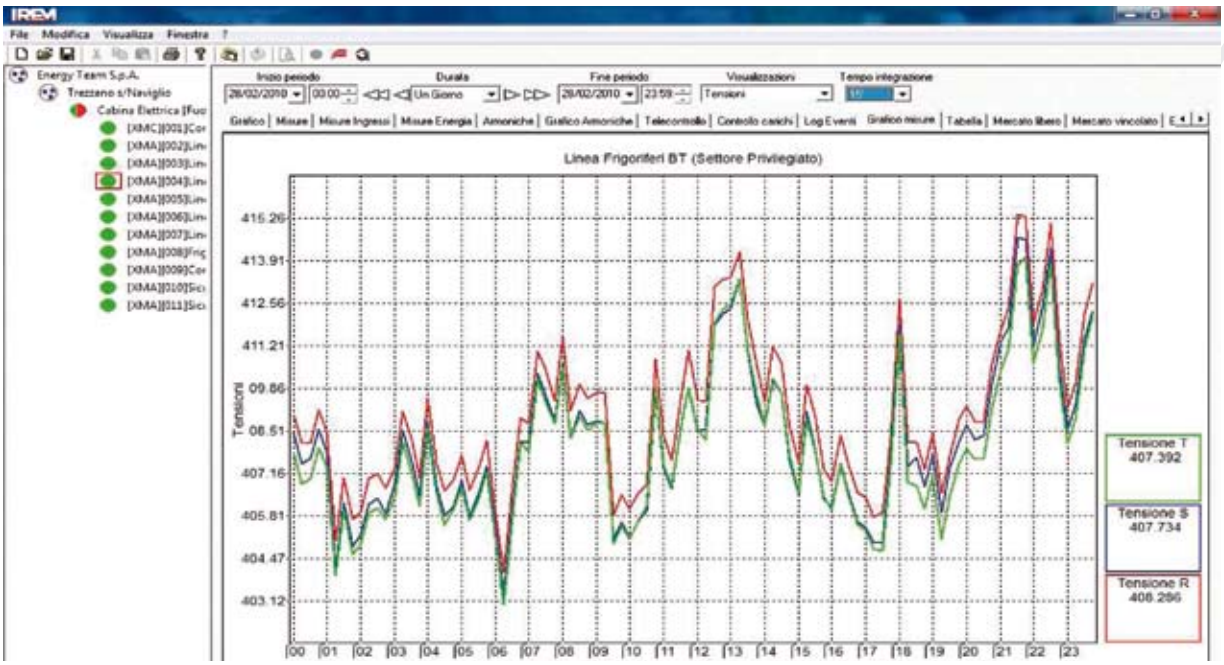
STABILISER OUT OF SERVICE

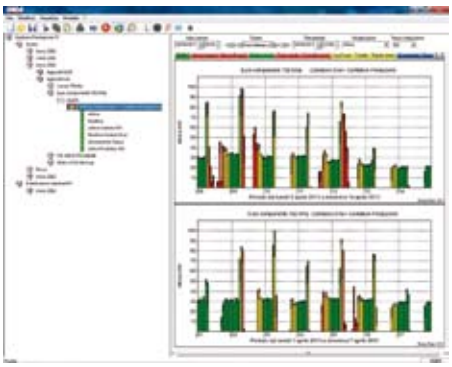
Signals that the stabiliser is no longer able to stabilize the voltage in a correct way. It is necessary to find and remove the cause.

EARTH LEAKAGE

Signals earth leakage caused by the loss of insulation or accidental contacts. It is necessary to find and remove the cause.

Remote control via internet





In order to access the gathered data via internet, the application IREM WEB SERVER is available. This multiuser and multisite software is using the protocol http standard and allows, through any browser (Explorer, Chrome, Safari, Firefox) with HTML5 to:

- access at any time through any internet connection thanks to the use of a user ID as well as a password. No program has to be installed,
- to limit the visualized area by a configuration of the access to the gathered data, for each user,
- add other equipment by implementing the protocol to the system,
- permits an optimized access of I-Pads and tablets,
- transform the gathered data into EXCEL and CVS,
- show histograms and diagrams in real time as well as summaries of selected periods,
- subdivide the electricity consumption to different price rates,
- visualize the history of the gathered data in a specific period by charts, columns and lines,
- have the data available in form of charts,
- send SMS and E-Mails in case of alarm conditions,
- show the alarm conditions.

Remote control and assistance

This allows the control center and/or authorized service staff (within the limits of the security measures) equipped with mobile phones and/or computers as well as the password to:

- analyze the gathered data and to deliver a diagnosis,
- activate from remote (where present) the by-pass, motorized circuit breakers or any switching to auxiliary lines or stabilisers if necessary,
- get in touch with the local service center to organize technical assistance on site.

IREM. Experience and Quality

IREM is a leading company in the manufacture of electromechanical and electronic equipment for the control of the mains power in the following sectors:

- powering of discharge lamps for professional applications;
- protection of electric users against line disturbances;
- luminous flux regulation in lighting plants;
- power generation by micro hydroelectric plants.

Since its foundation in 1947, ***IREM*** has gained wide recognition due to the reliability and innovative content of its higt-tech products. A reliable company deserving the Oscar-ward. In 1992, in Los Angeles,
Mario Celso - founder of ***IREM*** - was granted the "***Scientific-Technical Award***" by the Academy of Motion Picture Arts and Sciences.

Two production plants, a philosophy based on "quality upgranding" as the company's primary concern and direct export exceeding
50% of the global turnover are a warranty of continuity and development.
Experience, quality and professional skill: these are the factors that permitted ***IREM*** to achieve in 1993 the certification of its quality system in compliance with ***UNI EN ISO 9001*** standard, a further confirmation of ***IREM*** commitment to constantim provement to ensure the maximum satisfaction of the customer and its capacity to guarantee:

• a constant quality standard
• precision and repeatability of all working processes
• dropping of acceptance control at the customer's plant
• identification and traceability of a product through the years.

In year 2000, ***IREM*** obtained the certification of its environment management system according to ***UNI EN ISO 14001*** standard.This certification is a firm demonstration of the company's will to protect the environment not just through its products, but also via precise patterns of behaviour.

IREM SpA - Via Abegg 75 - 10050 Borgone - Torino - ITALY
Tel. ++39 011 9648211 - Fax ++39 011 9648222
e-mail: irem@irem.it - www.irem.it

99534101