



GENSETS · CORPORATIVE · PRODUCTS · SCIENCE&TECHNOLOGY · INNOVATION

25 **POWER SOLUTIONS**
Years **INMESOL**
1990 / 2015

*On behalf of **INMESOL**, we sincerely thank your trust in our company and wish you a 2016 full of happiness, peace and prosperity.*





INMESOL II-440 Generator sets installed in 'Dr. Nicolás Leoz Stadium' in Asunción, Paraguay

GENERATOR SETS IN FOOTBALL STADIUMS

Everybody knows how showy football matches are and the media interest they arouse, let alone if we are talking about The **FIFA World Champions League**, the **UEFA Champion League** or The **Bridgestone Libertadores of America Cup** to mention but a few.

All tournaments are controlled by specific **rules and regulations** where **requirements** about football stadiums are stated. Those stadiums that do not meet these requirements will not be accredited to hold any tournament matches.

Having a **Generator set with network** is obligatory. It is stated on these rules and regulations in case there is a power disruption or cut.

For example, **CONMEBOL** – South American Football Federation – **in its 'Bridgestone Libertadores of America Cup rules and regulations'** states in point 6 'Stadiums':

ARTICLE 9

9.2 All stadiums must have an external Generator Set with network so as to prevent interruption of electric power and to guarantee a constant and continuous flow during matches in case there is a power disruption. CONMEBOL representatives are allowed to ask for a test on the system to double check its functioning. Absence of this generator set with network could mean that the stadium is disqualified. It may also have to face other penalties that CONMEBOL considers suitable.

Grupo GAIA S.A., our distributor in Paraguay, has installed a **II-440 Generator set with network** in **Club Libertad, "Dr. Nicolás Leoz"** stadium, located in 'Avenida Artigas' that is one of the main avenues in **Asunción** city.

This stadium has 4 floodlights that contain 22 lamps each (2400 Watts each).

The Generator set is connected to 2 lighting lines and a 3rd line assigned to facilities, the media press and other services offered by the club.

INMESOL generator set has been chosen not only for its reliability but mainly because of its **outstanding soundproofing characteristic**, generating very low noise pollution and reducing any inconveniences that could be caused to nearby citizens.

In addition, this system has a cutting edge **remote control DSE 890** device and all the advantages that this kind of systems add to control and management of sets.



INMESOL II-440 Generator Set next to the floodlights

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ADAPTED

TO BE STRONG, VERSATILE AND RELIABLE

The INMESOL RENTAL RANGE provides ample and reliable power where and when it's needed.

RR RENTAL RANGE

STAGE IIIA COMPLIANT
SMART POWER



A 500 V direct current is applied using a digital multimeter.

THIS IS HOW WE PERFORM ELECTRICAL SAFETY TESTS ON GENERATOR SETS AT INMESOL

At Inmesol, ensuring the safety of our generator sets is paramount. That is why we carry out several verification tests during the final stage of manufacture. As we are dealing with machines which generate electrical energy, the electrical safety checks have particular relevance in the process.

As well as load tests—checking the generator sets supply the power they are designed for—each generator set is subjected to an exhaustive protocol of tests. These include checking the thermal-magnetic and differential electrical protection works properly and verifying the potential equalisation and electrical insulation. The latter tests are essential to ensure that the equipment offers the necessary safety mechanisms in the event of a power supply or

to check that all the metal components to which the user has access are connected to the main earthing protection terminal, thereby forming a proper potential equalisation network so that if there is a bypass or leak while the machine is being used, the electrical protections ensure that the current comes from the earthed installation.

Fundamentally, this trial must check that there is very low electrical resistance between the main potential equalisation protection terminal and the metal parts to which the user has access. To check this, and given the characteristics of our generator sets, we usually apply a trial current of at least 25 A, so we use a power source which supplies up to 24 V of alternating current.



Taking measurements between the different metal parts on the generator set canopy and the main protection terminal.



Reading of the resistance between the generator set's main protection terminal and the right-hand canopy

We measure the resistance between the main protection terminal and the points on the genset with which the user may come into contact during the machine's operation, noting the values, which generally oscillate between 8 and 36 mΩ. Although the resistances are extremely low and the regulation establishes determined limits, if we obtain a value which significantly differs from those stipulated, we rectify the earthing interconnection, as the difference tells us that there is no continuity in this part. This revision is carried out exhaustively to confirm continuity in all the pieces.

2º. Electrical insulation trials

These tests are performed in accordance with Section 18.3 of the abovementioned standard EN 60204-1 and they serve to check that the insulation between the active parts of the generator set (those subjected to voltage) and the non-active parts (with metal accessible to the user) is sufficiently effective.

The verification process consists of measuring the resistance between the active parts in the genset and the main earthed protection terminal by applying a power source of 500 Vdc. (All the non-active metal parts in the genset are already connected with potential equalisation to the main earthing protection terminal.)

For these trials, the regulation does establish a minimum resistance value of 1 MΩ, even though the tests carried out give values of several dozen MΩ or GΩ. In the latest tests performed at Inmesol, for example, the resistance value was 12.2 GΩ, indicating that the insulation is indeed very high.

bypass. Here at Inmesol, we perform these tests in the order described below:

1º. Potential equalisation protection verification trials

These tests comply with Section 18.2 of the standard EN 60204-1: Safety of machinery – Electrical equipment of machines. They allow us

OUR DISTRIBUTOR 'GLOBAL ASSISTANCE' TAKES PART IN 6TH INTERNATIONAL MALI MINING AND PETROLEUM CONFERENCE & EXHIBITION JMP



Stand of Global Assistance JMP exhibition area.



Global Assistance graphics.

Mali is one of the most important **gold producing countries** with significant reservoirs in Africa. As a consequence, the JMP conference, has become one of the most relevant events in Mali's economy where companies in the **Mining and Petroleum sector can do business, collaborate and cooperate.**

This year **The Centre International de Conférence de Bamako (CIC)** has been Mali's conference venue for 3 days: 17th, 18th, 19th November

'**Enhancing mining contribution to Mali's Economy**' was the common issue for the 58 speakers.



Generator Sets IP-014, IP-0 50 & IP-066

Among them, there were important members of **The Republic of Mali's government** who gave talks related to the topic.

The fact that renown speakers took part in the event caught attendees' attention who listened carefully to speakers' **advice and conclusions.**

There were more than 900 attendees from not only **Mali and Africa** but also a great number from **Europe Asia and America.**

The number of **exhibitors** increased to 68 and each of them presented their most innovative products and services in the different exhibition areas assigned.

Our importer and distributor **Global Assistance**, which is characterized by its excellent work, was one of the exhibitors in the fair. It has been building up **INMESOL reputation as a benchmark Spanish brand** which offers high-quality and solid generator sets **2.5 to 2500 kVA** perfect for the mining industry demand.

Our results in this important event have been more than satisfactory since our Gen sets have aroused a lot of interest. Besides, we were able to see and gather information on current market needs and demand

within the mining sector in Mali which has a great potential and could mean the construction of big plans that need generator sets such as **800 & 1000 kVA.**

Furthermore, petroleum companies were interested in our generator sets and asked for several **quotation** for their **petrol stations.**

Generator Sets in the Mining Sector

Generator Sets are key to the mining sector since they supply the right amount of electricity for machinery and infrastructure, both during extraction and processing of industrial minerals.

INMESOL is experienced in the needs of which equipments are adequate for this kind of installation or locations. It provides the **right solution** for mining companies and their unique working environment.

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Inmesol, S.L. company with ISO 9001 quality management system certificate and ISO 14001 Environmental Management System Certificate for the: "Design, manufacture, marketing and technical assistance of power generators, lighting towers, welding generators, tractor with PTO generator and hybrid generation systems."



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