

GSW2270M



Main Features

| | | |
|----------------------|------------|-----|
| Frequency | Hz | 50 |
| Voltage | V | 400 |
| Power factor | cos ϕ | 0.8 |
| Phase and connection | | 3 |

Power Rating

| | | |
|-------------------|-----|---------|
| Standby power LTP | kVA | 2268.00 |
| Standby power LTP | kW | 1814.40 |
| Prime power PRP | kVA | 2171.08 |
| Prime power PRP | kW | 1736.86 |

Ratings definition (According to standard ISO8528 1:2005)

PRP - Prime Power:

It is defined as being the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output over 24 h of operation shall not exceed 70 % of the prime power.

LTP - Limited-Time running Power:

It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 h of operation per year (whose no more than 300 for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Engine specifications

| | | |
|-------------------------------------|--------------------------|---------|
| Engine manufacturer | MTU | |
| Model | 16V4000G23 | |
| Version | 50 Hz | |
| [50Hz] Exhaust emission level | Unregulated | |
| Engine cooling system | Water | |
| Nr. of cylinder and disposition | 16 V | |
| Displacement | cm ³ | 76300 |
| Aspiration | Turbocharged aftercooled | |
| Speed governor | Electronic | |
| Operating Speed-Nominal | rpm | 1500 |
| Prime gross power PRP | kW | 1798 |
| Maximum gross power LTP | kW | 1965 |
| Oil capacity | l | 225 |
| Lube oil consumption @ PRP (max) | % | 1 |
| Coolant capacity | l | 260 |
| Fuel | Diesel | |
| Specific fuel consumption @ 75% PRP | g/kWh | 191 |
| Specific fuel consumption @ PRP | g/kWh | 188 |
| Starting system | Electric | |
| Starting engine capability | kW | 2 x 7.5 |
| Electric circuit | V | 24 |

Fuel system:

- Electronically controlled high-pressure injection with single unit injection pumps (EUP)
- Fuel delivery pump
- Fuel main filter
- Fuel priming pump for initial system filling and venting
- Closed fuel system

Lube oil system:

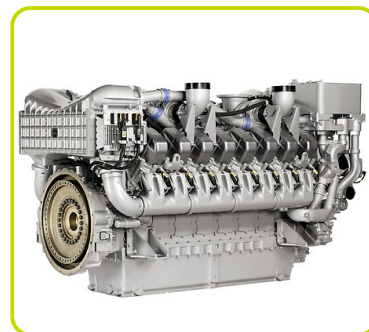
- Forced-feed lubrication system with piston cooling
- Lube oil circulation pump with safety valve
- Lube oil multi-stage filter
- Lube oil heat exchanger
- Oil filler neck and oil dipstick for measurement on non-running engine
- Closed crankcase venting system

Combustion air system:

- Exhaust turbochargers
- Set of dry-type air filters with contamination indicator

Cooling system :

- Coolant circulation pump and coolant thermostat for jacket water cooling systems
- Electric radiator for jacket water and charge air cooling circuit with integrated expansion tank
- Coolant level sensor



Alternator Specifications

| | | |
|---------------------------|-------------|------|
| Brand | Mecc Alte | |
| Model | ECO46-1LN/4 | |
| Voltage | V | 400 |
| Frequency | Hz | 50 |
| Power factor | cos ϕ | 0.8 |
| Voltage regulation system | Electronic | |
| Poles | 4 | |
| Type | Brushless | |
| Standard AVR | DER1 | |
| Voltage tolerance | % | 1 |
| Efficiency @ 75% load | % | 96.8 |
| Class | H | |
| IP protection | 21 | |
| Phases | 3 | |

Mechanical structure

Robust mechanical structure which permits easy access to the connections and components during routine maintenance check-ups.

Voltage regulator

Voltage regulation with DER 1. The digital DER 1 is a Digital controlled regulator, based on DSP (Digital Signal Processor) that combines function as Voltage Regulation and Alternator Protections and Diagnostic into a very small single board.

Voltage supply: 40Vac+270Vac

Maximum continuous output current: 4Adc

Frequency range: 12Hz+72Hz

Single phase sensing automatic recognition

Average value of voltage regulation

Voltage regulation range (sensing) from 75Vac to 300Vac

Precision of voltage regulation: $\pm 1\%$ from no-load to nominal load in static condition, with any power factor and for frequency variations ranging from -5% to +20% of the nominal value.

Precision of voltage regulation: $\pm 0,5\%$ in stabilized conditions (load, temperature).

Transient voltage drop and overvoltage within $\pm 15\%$

Voltage recovery time within $\pm 3\%$ of the value set, in less than 300 msec.

Underspeed protection with adjustable threshold and slope

Overvoltage and undervoltage alarms

Excitation overcurrent protection with delayed intervention

Alarm conditions storage (type of alarm, number of events, duration of the last event, total time)

Memorization of the regulator operation time

Windings / Excitation system

Generator stator is wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th ...) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches. MAUX (Standard): The MAUX MeccAlte Auxiliary Winding is a separate winding within the main stators that feeds the regulator. This winding enables to take an overload of 300% forced current (short circuit maintenance) for 20 seconds. This is ideal for motor starting requirements. PMAUX (optional): Alternator can be equipped with the optional PMAUX (Permanent Magnet Generator) which matches the performance and is capable of supporting both linear and distorted loads.

Insulation / Impregnation

Insulation is of class H standard. Impregnation is made with premium tropicalised epoxy resins by dipping and dripping. High voltage parts are impregnated by vacuum, so the insulation level is always very good. In the high-power models, the stator windings undergo a second insulation process. Grey protection is applied on the main and exciter stator to give enhanced protection.

Reference standards

Alternator manufactured according to , and complies with , the most common specification such as CEI 2-3, IEC 34-1, EN 60034-1, VDE 0530, BS 4999-5000, CAN/CSA-C22.2 No14-95-No100-95.



Genset equipment

BASE FRAME:

Base frame made of welded steel profiles, complete with anti-vibration mountings properly sized.

The baseframe has a grounding point to connect all metal parts of the generating set and it provides a high structural strength.

ENGINE COMPLETE WITH:

- Liquids (no fuel)

MANUAL OIL DRAININ PUMP:

- Oil draining facilities

CONTAINER 40':

Soundproof Container made by monoblock structure and designed to satisfy the most disparate needs of the Customer.

Main feature are:

- Structure similar to shipping containers (upper and lower corner castings, monolithic structure, walls and roof made of corrugated steel sheet), making them particularly strong and suitable .
- High resistance to the atmospheric agents
- Polyester powder painting and automatic blasting SA 2.5
- Air inlet and exhaust openings air outlet for genset cooling
- It is foreseen space for housing the electrical panel, if necessary the control panel can be separated from alternator, in a dedicated room.
- The floor is made of textured sheeting reinforced with profiles at steady pace bent.
- Doors single or double swing , these are fixed by sturdy steel hinges and equipped with various systems of locks, such as lever bolt locks, panic bars etc.

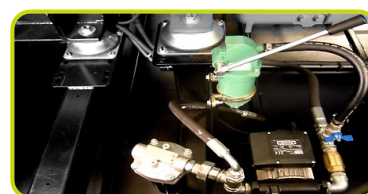
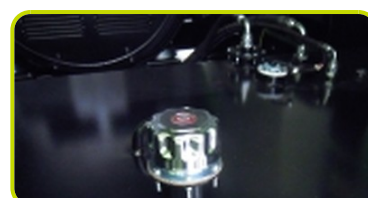
SOUNDPROOF:

The walls, divisors and roof are self supporting and with high acoustic absorption. They are produced in galvanized steel-sheet and subsequently painted with a galvanic deposition of polyester powder. Inside they are composed by a sheet of rock wool . Exhaust silencers placed inside or outside the container depending on genset model. Residual noise level of 70±3dB(A) at 7 m



Genset Equipment - Basic Configurations Available:

| | | |
|--|----|------|
| BAT – LEAD-ACID STARTING BATTERIES KIT : | | |
| Battery | n | 4 |
| Battery Capacity | Ah | 220 |
| MBS - Manual Battery Switch | | • |
| INTEGRATED FUEL TANK - VERSIONS AVAILABLE : | | |
| IFT1 - Integrated Fuel Tank (steel) | l | 500 |
| IFT2 - Integrated Fuel Tank (steel) | l | 1000 |
| FBD - Fully bunded base frame | | • |
| LDS - Leakage detection sensor (only with FBD) | | • |
| FCV - Fuel Cut Off Valve | | • |
| AFP - Automatic Fuel Pump | | • |
| DFP - Double Automatic Fuel Pump | | • |
| PHS - Coolant Pre-Heating System - available for models: | | • |
| ALS - Automatic Lube Oil Top Up System with lube oil tank 100L | | • |
| • : Supplement available | | . |
| Other Configurations and-or special versions available on requests | | . |



Dimensional data

| | | |
|------------|--------|-------|
| Length | (L) mm | 12190 |
| Width | (W) mm | 2438 |
| Height | (H) mm | 2896 |
| Dry weight | Kg | 23620 |



Consumption

| | | |
|-----------------------------|-----|--------|
| Fuel consumption @ 75% PRP | l/h | 305.99 |
| Fuel consumption @ 100% PRP | l/h | 402.41 |

Installation data

| | | |
|-------------------------------|---------------------|---------|
| Total air flow | m ³ /min | 2661.00 |
| Exhaust gas flow @ PRP | m ³ /min | 324 |
| Exhaust gas temperature @ LTP | °C | 485 |

Data Current

| | | |
|------------------|----|---------|
| Battery capacity | Ah | 220 |
| MAX current | A | 3273.67 |
| Circuit breaker | A | 3200 |

Control panel availability

| | |
|-------------------------|-----|
| AUTOMATIC CONTROL PANEL | ACP |
| MODULAR PARALLEL PANEL | MPP |



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