

## 6ltaa8.9-G2 engine 200 Kw Cummins Diesel Generators With ATS System 50Hz/60Hz

Our Product Introduction

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### Basic Information

- Place of Origin: CHINA
- Brand Name: Cummins Power
- Certification: ISO9001
- Model Number: FM800kw
- Minimum Order Quantity: 1
- Price: Negotiable
- Packaging Details: Plywood Package
- Payment Terms: T/T
- Supply Ability: 1000



### Product Specification

- Air Compressor: Integrated
- Air Intake System: Turbocharged
- Alternator: Brushless
- Coolant Filter: Full-Flow
- Cooling System: Liquid-Cooled
- Emissions Compliance: EPA Tier 4 Final/EU Stage IV
- Engine Type: Diesel
- Exhaust System: Aftertreatment
- Fuel Filter: Dual-Stage
- Fuel System: High-Pressure Common Rail
- Governor System: Electronic
- Lubrication System: Full-Flow
- Oil Filter: Full-Flow
- Power Output: Up To 2000 KW
- Starting System: Electric



### More Images



Our Product

### Product Description

**200kw Electric Generator 250kVA with Cummins Engine 6ltaa8.9-G2 Silent with ATS System  
50Hz/60Hz**  
**Basic Info.**

Model NO.	GF/GFS-C800KW
Installation Method	Fixed

**Packaging & Delivery**

Stroke	Four Stroke
Cooling Method	Water Cooling
Output Type	AC Three Phase
Speed	Speed
Conditions of Use	Land Use
Usage	Common Units
Landuse Type of Unit	Low Noise Automation Type
Excitation Mode	AC Rotating Exciter
Fuel Tank	8-9 Hours Base Fuel Tank
Color	Depends
Model	Open Type/Silent Type/Trailer Type/Container Type
Alternator	Leroy Somer/Stamford/Stamford Copy
Engine Model	Kta38-G5
Engine	Ccec/USA Brand
Transport Package	Container
Specification	40HQ Container
Trademark	Gspark
Origin	Fujian
HS Code	8502
Production Capacity	2500/Month
Package Size	5800.00cm * 2500.00cm * 2400.00cm
Package Gross Weight	43000.000kg

### Helpful tips on Generator Set Fault

When fault occurs during generator set running,could do primary judgement according to following tips.

Icon	Indicat or Light	Reason	Fault Analysis and Solve Method
High Water Temperature Alarm	High Water Temperature Alarm	When water Temperature has risen to a level higher than or equal to the sensor setting,the light is on.	Normally,it is caused by lack of Water or Oil Shortage,or Overload. ----Should Automatically Shutdown Generator set Immediately.
Low Oil Pressure Alarm	Low Oil Pressure Alarm	When water Temperature has risen to a level higher than or equal to the sensor setting,the light is on.	Normally,it is because of lack of Oil or Lubrication System Failure which caused by refueling or replacing the Oil Filter.----- When occurs this fault,should automatically shutdown generator set immediately.
Low Fuel Level Alarm	Low Fuel Level Alarm	When Fuel level has been detected by sensor fitted to the daily tank,the light is off.	Normally,it caused by lacking of Water or Oil Shortage,or Overload.-----When occurs this Fault,should automatically shutdown Generator set Immediately.
Battery Charger Fault Alarm	Battery Charger Fault Alarm	The Charing System has fault while engine still running,the light is off.	Battery Charging System Fault Caused.---The light in on at the initial Start,when the charger reaches a certain speed,the light is off.---This Failure will not lead to Automatic Shutdown Generating Unit.
Crank Failure Alarm	Crank Failure Alarm	When Generator set fail three times(or six times) in a row starting,the light is on	It is caused by Oil Supply System or Re-Start System Failure.
Overload or Breaker Tripping Alarm	Overload or Breaker Tripping Alarm	When Overloading or Short Circuit,the light is on. Tripping Circuit Breaker cause generator set load out.	For this fault,it needs to load or unload some parts to eliminate short-Circuit,and then re-close the circuit Breaker.

#### I. features of silent generator set

The silent generator set is carefully designed by introducing foreign low-noise generator and engine

technology. Silent generator set design concept advanced, complete variety.

In addition to a series of diesel generating sets and various functions of diesel generating sets, the silent generating sets also have the following features:

1. Low noise of the unit, compact overall structure and small space;
2. The box body is all removable. The box body is made of steel plate splicing.
3. The box body adopts multi-layer impedance mismatch silencer structure and large internal impedance muffler. The box body is designed reasonably. The box body is equipped with a large-capacity oil tank inside, and two overhaul doors are provided at the same time to facilitate the unit's fault maintenance.
4. At the same time, there are observation Windows and emergency shutdown buttons of the unit on the box body, so as to observe the operation of the unit and stop the unit at a faster speed in case of emergency to avoid damage to the unit

Features of silent generator:

1. Vibration damping facilities. High-performance shock absorbers are used between the diesel engine and generator and the bridge frame to reduce noise generated by vibration.
2. Sound insulation cover: the sound insulation cover is made of four to five layers of sound absorbing materials. The technology is mature and the sound insulation effect is obvious.
3. The inlet wind silencer, a labyrinth air silencer with three layers of sound-absorbing materials, not only ensures sufficient entrance of fresh air, but also effectively seals off the noise.
4. Exhaust air silencer, a labyrinth exhaust silencer with three-layer sound-absorbing materials, not only ensures unobstructed exhaust air, but also effectively seals off noise propagation and diffusion.
5. The adoption of exhaust muffler and impedance composite muffler greatly reduces the noise when the exhaust gas is discharged, and the emission can meet the national standards.
6. Power cable connection adopts fixed junction box structure and is directly connected outside the box.

Detailed parameters of the silent generator set

The complete set of units is generally composed of diesel engine, generator, control box, fuel tank, storage battery for starting and control, protective device and emergency cabinet

800kw Diesel Generator Set 1000kVA Silent Generator

Connection between engine and generator:

1. Flexible connection (connect the two parts with a coupling)
2. Steel connection: high-strength bolts connect the generator's steel connection piece with the engine flywheel, and then put it on the common base frame, which is then equipped with various protective sensors (oil probe, water temperature probe, oil pressure probe, etc.) to display various transmission by the control system

The working state of the sensor.

The control system is connected to the generator and sensor by cable to display data.

lil. Working principle of silent generator set

A diesel engine drives a generator that turns diesel energy into electricity.

In the diesel engine cylinder, the clean air filtered by the air filter is fully mixed with the high-pressure atomized diesel injected by the fuel injection nozzle. Under the upward extrusion of the piston, the volume is reduced and the temperature is rapidly increased to reach the burning point of diesel. Diesel is ignited, the mixture burns violently, and the volume expands rapidly, pushing the piston down, known as 'work'. Each cylinder works in a certain order, and the thrust acting on the piston through the connecting rod becomes the force that drives the crankshaft to rotate, thus driving the crankshaft to rotate.

When the brushless synchronous alternator is installed with the crankshaft of the diesel engine, the rotation of the diesel engine can be used to drive the rotor of the generator. With the principle of "electromagnetic induction", the generator can output the induced electromotive force, and the closed load loop can generate the current.

The basic operating principles of a generator set are described here only. A range of diesel and generator controls, protective devices and loops are needed to achieve a reliable and reliable electrical output.

If run for more than 12 h, its power output will be lower than the rated power of diesel engine is generally about 90% diesel generator single cylinder or multi cylinder four stroke diesel engine, I only work about single cylinder four stroke diesel engine under the basic principle: diesel engine starting is through human or other power rotation diesel engine crankshaft to the piston at the top of airtight cylinder reciprocating movement up and down. The piston in motion completes four stroke: intake stroke, compression stroke, combustion and work (expansion) stroke and exhaust stroke. When the piston moves from top to bottom, the intake valve opens and fresh air filtered by the air filter enters the cylinder to complete the intake stroke. The piston moves from the bottom up, the inlet and exhaust doors are closed, the air is compressed, the temperature and pressure are increased, and the compression process is completed. When the piston is about to reach the top, the injector sprays the filtered fuel into the combustor in a mist form and mixes it with the high-temperature and high-pressure air, and immediately catches fire by itself. The high-pressure pressure pushes the piston to work downward and drives the crankshaft to rotate to complete the work stroke.

Iv. Mute generator set operation method

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Description of diesel generator set: manual operation

1. Check the proper amount of fuel, oil and cooling water before starting the diesel generator set manually. The inadequate should be timely supplement. The unit should be free of oil leakage and water leakage.
2. The automatic control button of the automatic controller of diesel generator set shall be pushed to the middle position.
3. Open the key of the startup circuit, and continue to twist the key to start the diesel engine to the right. After successful startup, return the key to the charging position.
4. When the diesel generating set is shut down, the key shall be put back to the middle position of the diesel generating set in time

Automatic operation

1. Under normal power supply conditions, push the automatic control button of the automatic controller upward to the "automatic" position. Manual starting of the diesel engine is prohibited. When the power is cut off, the diesel generator set can start automatically and supply power to the grid automatically via the ATS switch.
2. After the diesel generator sets start operation automatically, the key switch shall be pressed to the charging position in time.

3. The unit can stop automatically when the power supply calls. After the shutdown, the key switch should be set to the middle position to prevent the battery from discharging, affecting the next use of diesel generator set instructions: maintenance

1. After 60 hours of operation, the diesel generator set needs to replace the oil, clean the wood filter and empty filter.

2. The electrolyte of the battery should be regularly checked, and it should be replenished in time if it is insufficient.

3. Check the belt tightness frequently, adjust the tensioning mechanism and keep the tension state.

4. Turn on the water heating and oil heating switch in cold season to keep the unit at a certain temperature and ensure the normal operation of the diesel generator

Five, silent generator set four stroke combustion process

Combustion process:

1. Combustion preparation stage (flame retardation stage)

The period of preparation for combustion from the injection of fuel to the onset of fire. In this stage, the fuel requires physical preparation such as heating, evaporation, diffusion and mixing with airflow, as well as chemical preparation such as decomposition and oxidation.

2. Rapid combustion phase

The period from the point of fire to the point of high pressure in the cylinder. When a small amount of diesel oil catches fire, the number of combustible mixture continues to increase and the flame spreads rapidly, the combustion speed is accelerated and the heat release rate is high. The pressure and temperature in the cylinder increased sharply. However, if the pressure rises too fast, the crank-link mechanism will be subjected to a great impact load, accompanied by sharp percussion sound, and the diesel engine works rough blasting, which should be restricted. In order to make diesel engine work smoothly, the growth rate of pressure shall not exceed 292 kpa / 1 ° (crank Angle)

3. Primary stage (slow burning period)

The main combustion stage is the stage between the explosion pressure occurrence point and the high combustion temperature occurrence point. This stage is characterized by the end of the fuel injection, during which most of the fuel is burned, giving off about 80% of the total heat, and the gas temperature rises to a high point. However, as the piston moves down, the cylinder volume increases, so the pressure in the cylinder does not change much. The oil supply ends at this stage.

4. Post-combustion stage

The period from the point of high combustion temperature to the end of combustion. At this stage, has a large number of oxygen consumption, fuel injection, no late enough oxygen mixture for combustion, combined with further down, the piston within the cylinder pressure and temperature have a larger decline, the combustion condition worsened, so that the fuel combustion is incomplete, appear exhaust smoke phenomenon, make relevant parts heat load increases, affect the efficiency and service life, so try to reduce combustion period after burning

The noise source and processing method of the silent generator set

Generator noise includes electromagnetic noise caused by magnetic pulsation between stator and rotor and mechanical noise generated by rolling bearing rotation

Noise control measures

On the premise of ensuring that the ventilation condition of diesel generator sets does not reduce the output power, the inlet and outlet channels and exhaust systems are processed with efficient sound absorbing materials and noise-cancelling equipment, so that the noise emission reaches the national standard of 85db.

Reduce exhaust noise.

Exhaust noise is the main noise source of the unit, which is characterized by high noise level and fast exhaust speed.

Governance is difficult. With a specially designed impedance composite muffler, the exhaust noise can generally be reduced by 40-60db.

Noise reduction of axial-flow fan.

When reducing the noise of generator cooling fan, two problems must be considered. The second is the required amount of silencing. For the above two points, resistance can be selected

The air inlet of the blade muffler shall be arranged in the same line as the generator set and the air outlet.

The air inlet shall be equipped with resistance blade muffler. As the pressure loss of the air inlet is within the allowable range, the air flow in and out of the machine room can be naturally balanced and the ventilation and heat dissipation effect is obvious.

The indoor air communication and sound insulation of the machine room will prevent the air in the room from convection when the closed water-cooled generator is shut down, and the high temperature in the room cannot be lowered in time. The low-noise axial-flow fan can be adopted and the resistive blade muffler can be added.

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