(example picture)

Diesel Generating Sets Worldwide

AJ Power Limited

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Model AJ2250

Ratings are to ISO8528-1.

Prime power – PRP- 2000 kva, 1600 kw at 0.8 pf.

Applicable for supplying power to a variable load for unlimited hours. A 10% overload capability is permitted for one hour within 12 hours of operation. The permissible average power output over 24 hours of operation shall not exceed 70 % of the PRP.

Emergency Standby Power – ESP – 2250 kva, 1800 kw at 0.8pf

Defined as the maximum power available during a variable electrical power sequence, for which a generating set can deliver in the event of a utility power outage or under test conditions for up to 200 h of operation per year. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP.

Voltage – 10.000 3 phase

Frequency – 50 Hz

Engine RPM - 1500

Engine

Make: Perkins

Model: 4016 TRG2

Engine Type 4 stroke-cycle water-cooled, turbocharged and water-to-air cooling system.

Cylinder Arrangement – Vee formation

Combustion System direct injection

Number of Cylinders 16

Governor electronic

Starting System - electric 24 v DC

Lubricating System forced lubrication by gear pump.

ENGINE STANDARD EQUIPMENT

Structure steel base

Crankcase breather

Engine driven charging alternator – 24 volts DC

Lubricating oil cooler

Fuel filters, full flow paper element

Jacket water pump, gear driven.

Lubricating oil filter, full flow paper element

Lubricating oil pump, gear driven.

Exhaust manifold dry

Generator sets provided to the enclosed specification.

Engine Cooling System

Base frame mounted radiator package with engine driven fan to push cooling air through radiator. Radiator fitted with mounting flange for flexible transition to be connected to enclosure air outlet.

Radiator suitable for 35 degrees c ambient temperature

Personnel touch guards fitted to avoid injury.

An AC supply powered engine coolant heater provided with thermostat to aid cold starting is fitted.

First fill of coolant / antifreeze mix provided

Batteries

High-capacity heavy duty lead acid batteries provided on suitable racks to be positioned next to generator set. Battery connecting leads and racks provided.

Battery isolator switch fitted on baseframe.

Lube Oil System

Lube oil drain pump fitted to engine sump and mounted on base frame. Pump supplied with hose.

Generator Base frame

Engine and alternator arrangement are close coupled and mounted on fabricated and welded steel base frame assembly. Suitable antivibration mounts are installed between base frame assembly and container floor.

Generator Fuel System

Feed and return lines to / from engine piped to freestanding 2000 litre bunded break tank mounted in generator enclosure.

Fuel / water separator fitted on fuel feed line to engine and fuel cooler on fuel return line back to daily service tank.

Alternator

As manufactured by Newage Stamford model HVSI804R. 4 pole model, brushless self-exciting, self-regulating screen protection, and drip proof.

Alternator is twin bearing construction with suitable coupling between engine / alternator.

Rating based on class F temperature rise.

• Class H insulation with severe environmental protection

• 2 off PT100 temperature detector probes in each winding

• IP 23 enclosure protection

• DM110 digital type automatic voltage regulator, incorporating voltage adjustment potentiometer and under frequency protection. AVR incorporates 3 phase sensing.

Permanent magnet generator fitted with 3 phase sensed AVR.

Alternator fitted with anti-condensation heater.

Terminal box removeable lid and side covers.

Voltage regulation is maintained within the limits of + or – 0.5% steady state from no load to full load including cold to hot variations at power factors between 0.8 lagging and unity and inclusive of a speed variation of 4.5%.

Radio and television suppression to comply with BS800.

Alternators meet the requirements of BS EN 60034, and the relevant section of other international standards, BS 5000, VDE 0530, NEMA MG1-32, IEC 34, CSA C22.2.100, AS 1359.

Control Panel Arrangement

Control and Protection System

InSight Auto start panel mounted within a vibration isolated robust steel enclosure. Control system utilises Easygen Woodward 3500XT controller with built in digital display.

Indication

Generator Voltage (Ph-Ph and Ph-N)

Generator Amps

Generator kw

Generator Hz

Generator kva

Generator N Current

Generator Battery Voltage

Generator Oil Pressure

Generator Water Temperature

Hours Run

Shutdowns & Alarms

Fail to start

Generator Under and Over Voltage

Generator Under and over Hz

Generator Overcurrent

Generator Under and Over Battery Voltage

Generator Low Oil Pressure

Generator High Engine Temperature

Low fuel level in bulk tank – signal by others

Alternator high winding temperature alarm and shutdown.

Differential protection **Note – Alternator fitted with 1 set of 3 x CTs for differential protection.** ***Matching switchgear CTs are not included and should be provided by switch gear supplier.***

Base Timers

Start Delay

Protection Hold Off Delay

Off Load Delay

Cooldown Delay

Operator Controls

Stop/Reset

Manual Mode

Auto Mode

Start

Functions

Auto Start / Manual start / Auto synchronising capability to control a generator and a mains circuit breaker.

Panel complete with all control relays switches buttons and wiring labelled and numbered where appropriate.

DC and AC wiring looms provided utilising multi pin connectors.

Mains supply operated 10-amp engine battery charger with battery charger failure alarm provided within control panel.

Documentation

General arrangement drawings

Wiring schematics including cable schedules.

Operation and maintenance manuals

CE certification

Factory Testing

Each generator set is individually load tested and all protection devices and control functions are simulated and checked prior to despatch preparation. Test certificate available.

ACOUSTIC CONTAINER SPECIFICATION

Generator set would be mechanically and electrically installed in a custom build enclosure.

Construction would include.

Corrugated steel sides

Mono pitched flat steel water shedding roof

Acoustically rated infill lining on walls and ceiling with perforated sheet steel inner skin.

4-point enclosure base lifting facility using lifting lugs

Standard chequer plate steel inner floor painted black. Floor bunded to prevent leakages from within enclosure. Bund alarm fitted.

2 x Single leaf personnel access doors supplied with lockable slam type door furniture; internal push button panic release & restraining door stays.

3 x earth bosses provided, 1 x Internal & 2 x External.

2 x Recessed Emergency stop switches.

2 x fuel pipe connections in container side wall for fuel feed /return on separate bulk tank.

ATTENUATION SPECIFICATION

End externally mounted cooling air inlet attenuation. Air entering horizontally.

End externally mounted hot air outlet attenuator. Hot air is discharged horizontally.

Air inlet opening fitted with motorised louvres. Air outlet fitted with gravity louvre – operation configuration of motorised louvre to be advised.

Designed in accordance to meet the specified noise level requirement. Attenuators comprise a flat sheet steel outer skin acoustically rated inner lining and perforated sheet steel inner skin to both casing and internal splitters. Air inlet and air outlet fitted with bird guard mesh screen and fixed pitch weather louvres.

Average noise level – 85 dba at 1 metre in free field conditions**.**

FUEL SYSTEM

Equipment includes.

- 2000 litre bunded fuel tank mounted inside enclosure arrangement.
- 600 mm raised neck inspection manway with bolted cover.
- Screwed connections
- Mushroom vent cap with overspill protection
- Low level feed connection
- Electronic gauge with 4 – 20 ma overfill and bund leakage alarm
- Connections for feed / return lines to/from bulk tank
- Socket provided for overfill protection device. Overfill protection provided by others.

Note fuel transfer equipment or pipework between bulk tank and enclosure tank not included.

AJ 2250- APPROX OVERALL CONTAINER DIMS (in mm) –

– Internal fuel tank included

Shipping Dimensions L14350mm x W3425mm x H3650mm. Height does not include silencer at approx 1500 mm diameter when installed at site.

Approx weight 31,500 kg excluding fuel.

EXHAUST SYSTEM Engine provided with exhaust outlet stainless steel flexible bellows. Bellows would be mounted between engine and silencers to prevent transmission of vibration from generator set to exhaust system. Pipework between engine and silencer lagged to prevent heat build-up.

Externally roof mounted mild steel silencer system finished in hot aluminium metal spray. Designed in accordance to meet the specified noise level requirement stated above.

Note - Silencer is removed for shipping purposes and assembly / installation at site required.

FLEXIBLE DUCT 1 x Flexible canvas duct made from a flame-retardant polyester material to comply with BS5867 Part 2 supplied between hot air outlet attenuator and engine radiator.

PAINT FINISH Container finish painted externally in 2 pack epoxy/acrylic to any colour from the RAL or BS4800 range. Colour to be confirmed. Internal paint finish of container in colour white. Life to first major maintenance – 10 years excluding any damage. All damage to be repaired in accordance with manufacturer's instructions. Note – Excluding the use of metallic colours RAL 9006 & 9007.

ELECTRICAL PACKAGE SPECIFICATION

3 x LED fluorescent lights c/w diffusers and with 1 off including 3hr D.C. backup.

1 x metal clad light switch at each personnel door.

1 x socket outlet with RCCD.

1 x Single-phase distribution board.

2 x Externally recessed emergency push stops. One per side at access door.

2 x Wall mounted panel heater with thermostat control

All wiring will be secure fixed within galvanised conduit in accordance with IEE

Gland plate provided on side wall of enclosure next to alternator terminal box to enable cable connections.

Note – Enclosures are handed to enable cable connection from right hand side on one unit and left-hand side on one unit.

Note – Oversized container is not provided with CSC certification for marine transport.