Model: M2200E6

Powered by MTU

Generator Specification

Service	PRP(1)	ESP(2)
Power (kVA)	2000	2200
Power (kW)	1600	1760
Rated speed (r.p.m)	1800	
Standard voltage (V)	440/254V	
Rated at power factor(cos phi)	0.8	

AGG Power gensets are compliant with ISO 9001 and CE standard, which include the following directives:

- 2006/42/EC Machinery safety.
- 2006/95/EC Low voltage
- EN 60204-1: 2006+A1: 2009, EN ISO 12100: 2010, EN ISO 13849-1: 2008, EN 12601 : 2010

(1) PRP (Prime Power):

According to ISO8528-1, prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during at 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

(2) ESP (Standby Power):

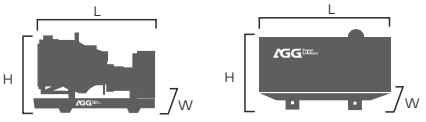
According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Powers	ESP		PRP		Standby
Voltage (V)	KVA	KW	KVA	KW	Amps
480/277	2200	1760	2000	1600	2646.3
440/254	2200	1760	2000	1600	2886.8
380/220	2200	1760	2000	1600	3342.7
220/127	2200	1760	2000	1600	5773.7
208/120	2200	1760	2000	1600	6106.8

Performance Data		
Model		M2200E6
Engine brand		MTU
Engine model		12V4000G83
Speed control type		ADEC
Phase		3
Control system		Digital
Starter motor voltage		24V
Frequency		60HZ
Engine speed (RPM)		1800
Fuel Consumption (L/H)	100% standby power	446.3
	100% prime power	405.7
	75% prime power	301.3
	50% prime power	214.0

Standard reference Conditions

Note: Standard reference condition 25℃ (77℉) air inlet temp, 100m(328ft) A.S.L 30% relative humidity. Fuel consumption dat with diesel fuel with specific gravity of 0.85 and conforming to BS 2869: 1998 , Class A2



Dimension and Weight		
Dimension	Open	Silent
Length (L)	6350mm	12192mm
Width (W)	2150mm	2438mm
Height (H)	2500mm	2896mm
Net Weight	-	-
Fuel Tank (L)	-	-

Note: This parameters allows for some acceptable deviations.

Engine Specification: 12V4000G83

Basic technical data	
Operated method	Four stroke diesel
Combustion system	Direction injection
Bore	170mm
Stroke	210mm
Displacement, total	57.2 L
Number of cylinders	12
Compression ratio	16.4:1
Flywheel housing flange	SAE 00
Number of intercooler	N/A
Number of Turbocharger	4

Cooling system	
Coolant temperature(at engine outlet to cooking equipment)	100° C
Coolant temperature after engine, alarm	102° C
Coolant temperature after engine, shutdown	104° C
Coolant antifreeze content, max. permissible	50%
Coolant flow rate	67 m3/h
Coolant pump: inlet pressure, min	0.5 bar
Coolant pump: inlet pressure, max	2.5 bar
Pressure loss in off-engine cooling system, max. permissible	0.7 bar
Cooling equipment: height above engine max. permissible	15 m
Cooling equipment: design pressure	N/A
Recommended coolant	N/A.

Combustion air	
Combustion air volume flow	2.4m³/s
Intake air depression	50 mbar

Fuel system	
Fuel supply flow, max.	16/min
Fuel return flow, max.	5/min
Fuel temperature differential before/after engine	30°C
Fuel fine filter (main circuit): particle retention	0.005mm

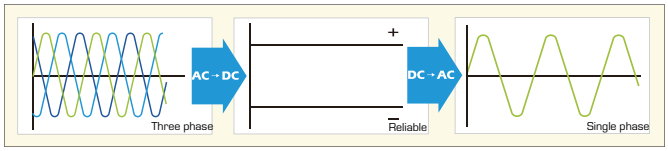
Starter system	
Starter, rated voltage	24V
Starter, rated requirement max	1450A
Starter, power requirement at firing speed	N/A

Exhaust system	
Exhaust volume flow	5.9 m³/s
Exhaust temperature after turbocharger	440℃
Exhaust backpressure limite value	30 mbar

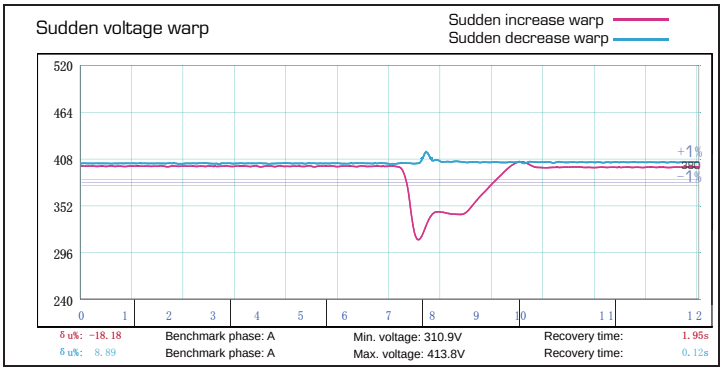
Heat dissipation	
Heat dissipated by engine coolant - CP with oil heat, without charge-air heat	640kW
Heat dissipated by engine coolant - FSP with oil heat, without charge-air heat	700kW
Charge-air heat dissipation - CP	410kW

Alternator Specification

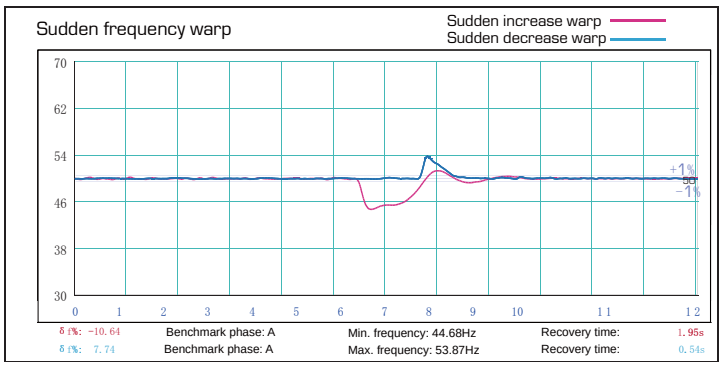
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



Emergency voltage curve



Emergency frequency curve



Options

Engine	Alternator	Generator Sets	Fuel System
• Water Jacket Pre-heater • Fuel heater	• Winding Temp measuring Instrument • Alternator Pre-heater • PMG • Anti-damp and anti-corrosion treatment • Anti-condensation heater • Winding and bearing RTD	• Tools with the machine • Extended range fuel tank • Bunded fuel tank	• Low fuel level alarm • Automatic fuel feeding system • Fuel T-valves
Canopy	**Lub oil system**	**Cooling System**	**Control Panel**
• Rental type Canopy • Trailer	• Oil Pre-heater • Oil temp sensor	• Front heat protection	• Remote control panel • ATS • Synchronizing controller • Adjustable earth leakage relay

Control Panel

Configuration

- Emergency stop button
- Protection MCB
- Battery charger
- Integrated aviation plug
- ATS connection
- Digital control module

Features

- 3 phase generator set monitoring
- Support of engines equipped with electronic control unit
- Comprehensive diagnostic message
- Automatic or manual start/stop of the gensets
- Push buttons for simple control, lamp test
- Graphic back-lit LCD display
- Parameters adjustable via keyboard or PC
- Mains measurements（50HZ/60HZ）
- Generator measurements（50HZ/60HZ）
- Comprehensive shutdown or warning on fault condition
- 3 phase Generator protections
  - Over-/under voltage
  - Over-/under frequency
  - Current/voltage asymmetry
  - Over current/overload
- 3 phase AMF function
  - Over-/under frequency
  - Over-/under voltage
  - Voltage asymmetry
- Configurable analog inputs
- Battery voltage, engine speed (pick-up) measurement
- Configurable programmable binary inputs and outputs
- Warm-up and cooling functions
- Generator C.B. and Mains C.B. control with feedback and return timer
- RS232 interface
- Modem communication support
- Hours counter
- Sealed to Ip65
- Event log

Benefits

- Less wiring and components
- Integrated solution
- Less engineering and programming
- User friendly set-up and button layout
- Module can be configured to suit individual applications
- PC software for simplified configuration
- Wide range of communication capabilities

Operation conditions

- Operation temp: -20 ℃ to + 70 ℃
- Storage temp: -30 ℃ to + 80 ℃
- Operating humidity: 95% w/o condensation
- Vibration : 5-25Hz, ±1.6 mm
  5-100Hz, a=4g
- Shocks: a= 500m/s²

Options

- Ethernet interface (Remote monitoring and control)
- GSM modem/wireless internet (Remote monitoring and control)
- RS232-RS485 Dual port interface
- Synchronizing control panel
- Distribution board with sockets kit and power busbar
- Battery trickle charge ammeter
- Earth leakage protection
- Earth fault protection
- Low fuel level alarm
- Low fuel level shutdown
- High fuel level alarm
- Fuel transfer system control
- Low coolant level shutdown
- High lube oil temp shutdown
- Overload via alarm switch on breaker
- Engine coolant heater controls
- Control panel heater
- Speed adjust switch
- Oil temp displayed on LCD screen
- Additional 8 inputs and outputs

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