

Model: M4000E6

Powered by MTU



Generator Specification

Service	PRP ⁽¹⁾	ESP ⁽²⁾
Power (kVA)	3637.5	4000
Power (kW)	2910	3200
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.

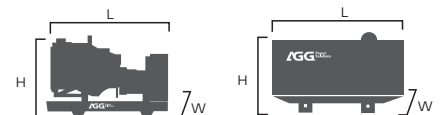
Powers Voltage (V)	ESP		PRP		Standby Amps
	KVA	KW	KVA	KW	
480/277	4000	3200	3637.5	2910	4811.4
440/254	4000	3200	3637.5	2910	5248.8
380/220	4000	3200	3637.5	2910	6077.5
220/127	4000	3200	3637.5	2910	10497.6
208/120	4000	3200	3637.5	2910	11103.2

Performance Data

Model	M4000E6	
Engine brand	MTU	
Engine model	20V4000G83L	
Speed control type	ADEC	
Phase	3	
Control system	Digital	
Starter motor voltage	24V	
Frequency	60HZ	
Engine speed (RPM)	1800	
Fuel Consumption (g/kWh)	100% standby power	-
	100% prime power	202
	75% prime power	215
	50% prime power	247

Standard reference Conditions

Note: Standard reference condition 25°C (77°F) 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)	7160mm	12192mm
Width (W)	2555mm	2438mm
Height (H)	2930mm	2896mm
Net Weight	REQ	REQ
Fuel Tank (L)	Option	Option

Note: This parameters allows for some acceptable deviations.

■ Engine Specification: 20V4000G83L

Basic technical data

Operated method	Four stroke diesel
Combustion system	Direction injection
Bore	170mm
Stroke	210mm
Displacement, total	95.4 L
Number of cylinders	20
Compression ratio	16.4:1
Flywheel housing flange	SAE 00
Number of intercooler	1
Number of Turbocharger	2

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	100 m ³ /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	4.3 m ³ /s
Intake air depression	50 mbar

Fuel system

USA Fed off highway - EPA2D 89.330-96

Europe off highway - CEC RF-06-99

Note: For further information on fuel specifications and restrictions, refer to the OMM of MTU Fuels section for this engine model.

Starter system

Starter, rated voltage	24V
Starter, rated requirement max	1450A
Starter, power requirement at firing speed	1300A

Exhaust system

Exhaust volume flow	11.4 m ³ /s
Exhaust temperature after turbocharger	505°C
Exhaust backpressure limite value	30 mbar

Heat dissipation

Engine coolant dissipation 100% load	1320 KW
Charge-air heat dissipation 100% load	900 KW
Radiation and convection heat, engine	-

■ Alternator Specification

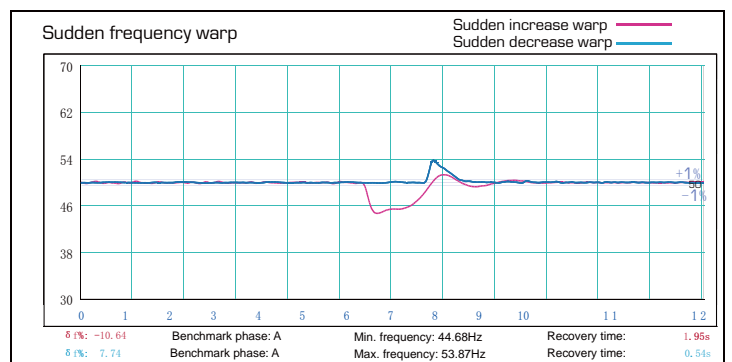
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



Emergency voltage curve



Emergency frequency curve



■ Options

Engine	Alternator	Generator Sets	Fuel System
<ul style="list-style-type: none"> Water Jacket Pre-heater Fuel heater 	<ul style="list-style-type: none"> Winding Temp measuring Instrument Alternator Pre-heater PMG Anti-damp and anti-corrosion treatment Anti-condensation heater Winding and bearing RTD 	<ul style="list-style-type: none"> Tools with the machine Extended range fuel tank Bunded fuel tank 	<ul style="list-style-type: none"> Low fuel level alarm Automatic fuel feeding system Fuel T-valves
Canopy	Lub oil system	Cooling System	Control Panel
<ul style="list-style-type: none"> Rental type Canopy Trailer 	<ul style="list-style-type: none"> Oil Pre-heater Oil temp sensor 	<ul style="list-style-type: none"> Front heat protection 	<ul style="list-style-type: none"> 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 °C to + 70 °C
- Storage temp: -30 °C to + 80 °C
- 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