

## Model: DE28D6

Powered by DEUTZ



### Generator Specification

Service	PRP <sup>(1)</sup>	ESP <sup>(2)</sup>
Power (kVA)	25	28
Power (kW)	20	22
Rated speed ( r.p.m)	1800	
Standard voltage (V)	220/127V	
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):

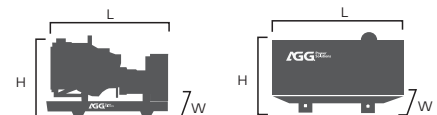
According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures 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	28	22	25	20	33.7
440/254	28	22	25	20	36.7
380/220	28	22	25	20	42.5
220/127	28	22	25	20	73.5
208/120	28	22	25	20	77.7

Performance Data		
Model	DE28D6	
Engine brand	Deutz	
Engine model	F3M2011	
Speed control type	Mechanical	
Phase	3	
Control system	Digital	
Starter motor voltage	12/24V	
Frequency	60HZ	
Engine speed (RPM)	1800	
Fuel Consumption (L/H)	100% standby power	-
	100% prime power	6.3
	75% prime power	4.6
	50% prime power	3.5

#### 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)	1750mm	2150mm
Width (W)	750mm	850mm
Height (H)	1050mm	1136mm
Net Weight	610KG	770KG
Fuel Tank (L)	-	50 L

Note: This parameters allows for some acceptable deviations.

## ■ Engine Specification: F3M2011

Basic technical data	
No. of cylinders	3
Cylinder arrangement	In-line
Cycle	4 stroke
Injection system	Single injection pumps
Displacement	2.33 L
Bore	94 mm
Stroke	112 mm
Compression ratio	19:1
Mean effective pressure	TBD
Piston speed	6.72 m/s
Rotation	CCW
Exhaust emission standard	TBD

Cooling system	
Delivery of coolant pump	1.38m <sup>3</sup> /h
Min. pressure before coolant pump	TBD
Coolant capacity(engine)	TBD
Coolant capacity (incl. cooling unit)	TBD
Air to boil	TBD
Fan power consumption	0.7 KW
Cooling air flow	2160 m <sup>3</sup> /h
Air pressure loss, external	1.5 mbar
Heat balance	
Heat dissipation (engine radiator)	13.5 KW
Heat dissipation (CAC)	TBD
Heat dissipation (Convection)	3.4 KW

Inlet / Exhaust Data	
Max. intake depression (switch setting)	20 mbar
Combustion air volume	104m <sup>3</sup> /h
Max. exhaust back pressure	30 mbar
Max. exhaust gas temperature	580°C
Exhaust gas flow (at above temp)	312 m <sup>3</sup> /h
Exhaust flange/pipe diameter	45 mm

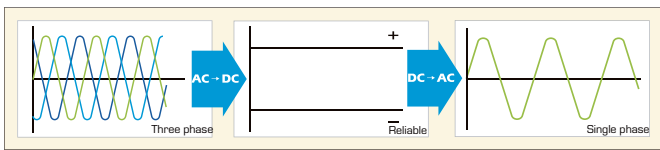
Output	
Gross output (LTP)	24.5 KW
Fan reduction	0.7 KW
Net flywheel	23.8 KW
Electrical output	20 KVA
Gross output (PRP)	23.3 KW
Gross output (Continuous power)	22.1 KW

Lubrication system	
Oil specification	TR0199-99-3002/6
Oil consumption (as % of fuel consumption)	0.3
Oil capacity (sump)	5.5L
Min. oil pressure (warning)	2.3 bar
Min. oil pressure (shut down)	1.5 bar
Max. permissible oil temp(oil pan)	130 °C

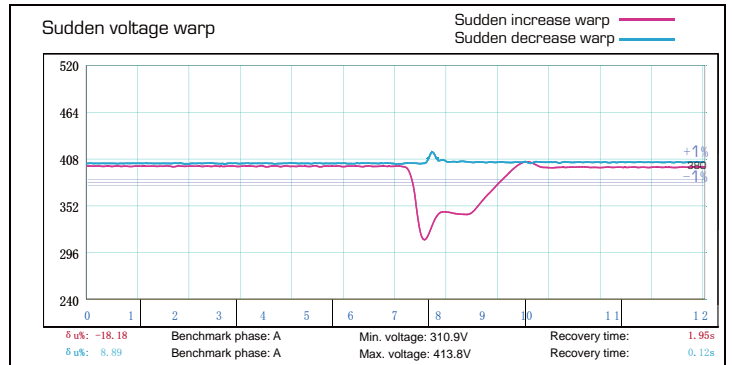
Electrical system	
Voltage	12 V
Starter	3 KW
Alternator output	55 A

## ■ Alternator Specification

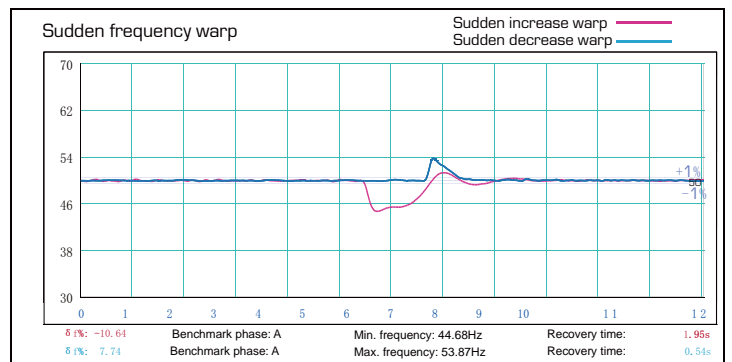
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



Emergency voltage curve



Emergency frequency curve



## ■ Options

Engine	Alternator	Generator Sets	Fuel System
<ul style="list-style-type: none"> <li>Water Jacket Pre-heater</li> <li>Fuel heater</li> </ul>	<ul style="list-style-type: none"> <li>Winding Temp measuring Instrument</li> <li>Alternator Pre-heater</li> <li>PMG</li> <li>Anti-damp and anti-corrosion treatment</li> <li>Anti-condensation heater</li> <li>Winding and bearing RTD</li> </ul>	<ul style="list-style-type: none"> <li>Tools with the machine</li> <li>Extended range fuel tank</li> <li>Bunded fuel tank</li> </ul>	<ul style="list-style-type: none"> <li>Low fuel level alarm</li> <li>Automatic fuel feeding system</li> <li>Fuel T-valves</li> </ul>
Canopy	Lub oil system	Cooling System	Control Panel
<ul style="list-style-type: none"> <li>Rental type Canopy</li> <li>Trailer</li> </ul>	<ul style="list-style-type: none"> <li>Oil Pre-heater</li> <li>Oil temp sensor</li> </ul>	<ul style="list-style-type: none"> <li>Front heat protection</li> </ul>	<ul style="list-style-type: none"> <li>Remote control panel</li> <li>ATS</li> <li>Synchronizing controller</li> <li>Adjustable earth leakage relay</li> </ul>

## ■ 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/s<sup>2</sup>

### 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