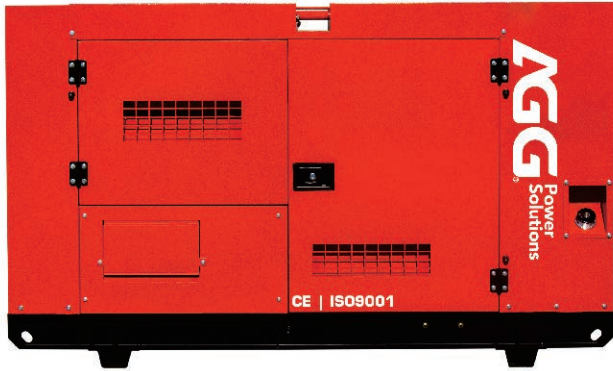


Model: K28D6

Powered by KUBOTA



Generator Specification

Service	PRP ⁽¹⁾	ESP ⁽²⁾
Power (kVA)	20	22
Power (kW)	16	17.6
Rated speed (r.p.m)	1500	
Standard voltage (V)	400/230V	
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.

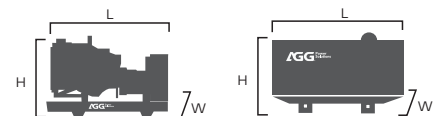
Powers Voltage (V)	ESP		PRP		Standby Amps
	KVA	KW	KVA	KW	
415/240V	22	17.6	20	16	30.6
400/230V	22	17.6	20	16	31.7
380/220V	22	17.6	20	16	33.4

Performance Data

Model	K22D5	
Engine brand	KUBOTA	
Engine model	V2203-BG	
Speed control type	Mechanical	
Phase	3	
Control system	Digital	
Starter motor voltage	12V	
Frequency	50HZ	
Engine speed (RPM)	1500	
Fuel Consumption (L/H)	100% standby power	-
	100% prime power	-
	75% prime power	-
	50% prime power	-

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)	-	-
Width (W)	-	-
Height (H)	-	-
Net Weight	-	-
Fuel Tank (L)	-	-

Note: This parameters allows for some acceptable deviations.

■ Engine Specification: V2203-BG

Basic technical data

No. of cylinders	4
Cylinder arrangement	In-line
Cycle	4 stroke
Combustion type	Spherical Type (E-TVCS)
Compression ratio	23:1
Bore	87mm
Stroke	92.4mm
Displacement	2.197L
Firing Order	1-3-4-3
Dry Weight	180kg

Cooling system

Pressurized Radiator, Forced Circulation with water pump	-
Ho(Heat Rejection to coolant)	21600 kcal/h
Thermostat(Opening Temp.)	71
Thermostat cover	Up Outlet
Fan Spacer	12mm
Fan	Φ380mm 6 blades, Pusher
Fan Pulley	φ 104
Fan Drive Pulley	φ 130

Fuel system

Injection Pump	Bosch Type
Fuel Injection Pressure	13.73 Mpa
Fuel Pump	Mechanical
Fuel Injection Timing	17.0 deg
Fuel Oil	Diesel Fuel No. 2-D(ASTMD975)

Induction system

Combustion Air Requirements (25 and 750mmHg)	1.72m ³ /min
Exhaust Gas Volume (25 and 750mmHg)	5.07m ³ /min

Lubrication system

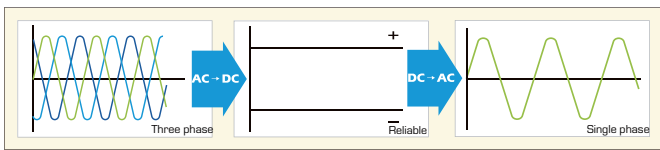
Class CF lubricating oil as per API classification is recommended	
Forced Lubricating by Trochoid Pump	
Lub.Oil Capacity	9.7 L

Electrical system

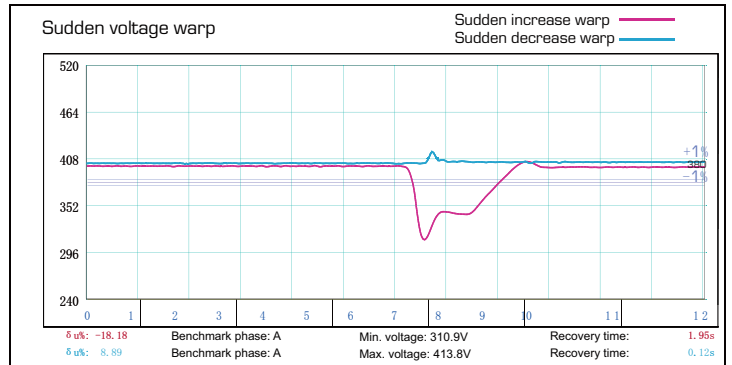
Starter	12V - 1.4kW
Alternator	12V - 40A

■ Alternator Specification

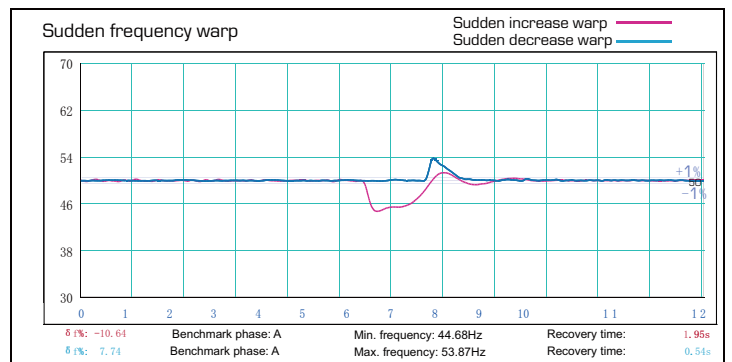
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



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