

Model: P22D5

Powered by PERKINS



Generator Specification

Service	PRP ⁽¹⁾	ESP ⁽²⁾
Power (kVA)	20	22
Power (kW)	16	18
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):

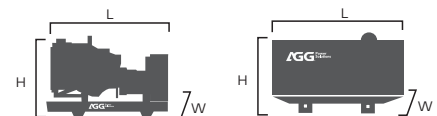
According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures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

Powers Voltage (V)	ESP		PRP		Standby Amps
	KVA	KW	KVA	KW	
415/240	22	18	20	16	30.6
400/230	22	18	20	16	31.8
380/220	22	18	20	16	33.4

Performance Data		
Model	P22D5	
Engine brand	Perkins	
Engine model	404A-22G1	
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	6.1
	100% prime power	5.3
	75% prime power	4
	50% prime power	2.9

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)	1570mm	2150mm
Width (W)	550mm	730mm
Height (H)	1190mm	1136mm
Net Weight	430KG	700KG
Fuel Tank (L)	86	50

Note: This parameters allows for some acceptable deviations.

■ Engine Specification: 404A-22G1

Basic technical data	
No. of cylinders	4
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Naturally aspirated
Compression ratio	23.3:1
Bore	84mm
Stroke	100mm
Displacement	2.2L
All ratings certified to within	± 3%
Speed variation at constant load	±0.25%

Cooling system	
Total coolant capacity	
-with radiator	7.0L
-without radiator	3.6L
Maximum top tank temp	112°C
Thermostat operation range	82-95°C
Radiator face area	0.167 m ²
Rows and material	2 rows aluminium
Pressure cap setting	90 kPa
Fan diameter	320,0 mm
Drive ratio	1.25 : 1
Number of blades	7

Fuel system	
Injection system	Indirect
Fuel injection pump	Cassette type
Fuel atomiser	Pintle nozzle
Nozzel opening pressure	29,0 MPa
Fuel lift pump type	Mechanical
- flow/hour	63 l/h
- pressure	10 kPa
Maximum suction head:	
-1500 rev/min	3m

Induction system	
Clean filter	3.0kpa
Dirty filter	6.5kpa
Air filter type	Dry

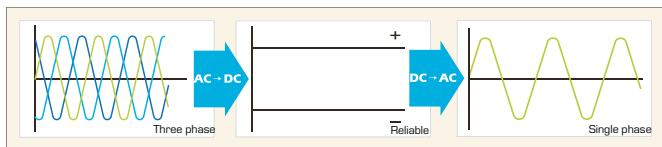
Lubrication system	
Total lub capacity	10.6L
Sump minimum	8.9L
Sump maximum	TBD
Maximum engine operating angles	35°C
-front up, front down, right side	
or left side	352-448 KPA
Lubricating oil pressure	TBD
-Relief valve opens	
- at maximum no-load speed	TBD
Oil consumption at full load	TBD
as a % of fuel consumption	

Electrical system	
Type	Negative ground
Alternator voltage	12 volts
Alternator output	65 amps
Starter motor voltage	12 volts
Starter motor power	2KW

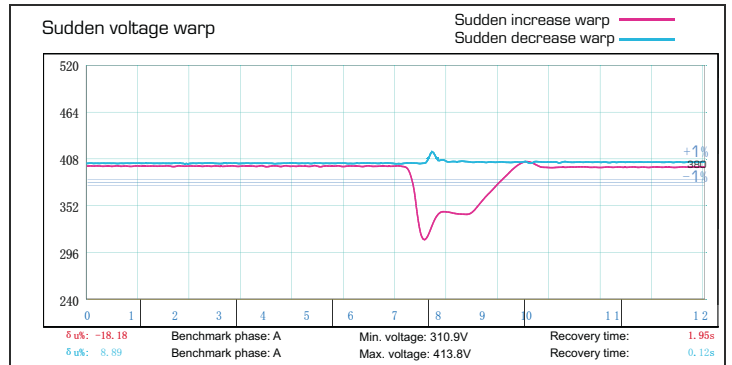
General installation	Prime power
Combustion air flow	1.74m ³ /min
Exhaust gas temp	510° C
Exhaust gas flow, wet	5.8m ³ /min
Engine coolant flow	55.2l/min
Cooling fan air flow	0.4KW

■ Alternator Specification

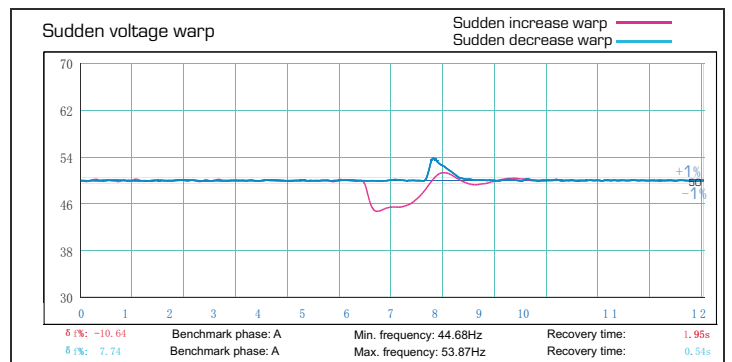
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



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
<p>Fitted with acoustic cloth sound attenuated to 68db 7m in free field condition</p> <p>Exhaust at prime power</p> <ul style="list-style-type: none"> Combustion air flow 64m³/min Exhaust gas temp 405oc Exhaust gas flow. Wet 195/m³/min Engine coolant flow 101/min Cooling fan air flow TBD Maximum exhaust back pressure, 10kpa Exhaust silencer 28db 	<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