

Model: P220D5

Powered by PERKINS



Generator Specification

Service	PRP ⁽¹⁾	ESP ⁽²⁾
Power (kVA)	200	220
Power (kW)	160	176
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 KVA	ESP KW	PRP KVA	PRP KW	Standby Amps
415/240	220	176	200	160	306.1
400/230	220	176	200	160	317.6
380/220	220	176	200	160	334.3

Performance Data

Model	P220D5	
Engine brand	Perkins	
Engine model	1106A-70TAG4	
Speed control type	Electronic	
Phase	3	
Control system	Digital	
Starter motor voltage	12V	
Frequency	50HZ	
Engine speed (RPM)	1500	
Fuel Consumption (L/H)	100% standby power	49.4
	100% prime power	45.8
	75% prime power	34.7
	50% prime power	23.1

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)	2763mm	3600mm
Width (W)	890mm	1100mm
Height (H)	1375mm	2170mm
Net Weight	1560KG	2399KG
Fuel Tank (L)	-	220L

Note: This parameters allows for some acceptable deviations.

■ Engine Specification: 1106A-70TAG4

Basic technical data	
No. of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Turbocharged and air charge cooled
Compression ratio	16:1
Bore	105mm
Stroke	135mm
Displacement	7.01L
All ratings certified to within	± 3%
Estimated total weight	788kg

Cooling system	
Total coolant capacity	
-with radiator	21L
-without radiator	TBD
Maximum top tank temp	110°C
Thermostat operation range	85-95°C
Radiator face area	0.351 m ²
Rows and material	4 rows, aluminium
Pressure cap setting	100 kPa
Fan diameter	610 mm
Drive ratio	1.2 : 1
Number of blades	7

Fuel system	
Injection system	Mechanical
Fuel injection pump	DP210G
Priming pump type	Manual
Maximum priming time	90 seconds
Fuel lift pump type	Electronic
- flow/hour	TBD
- pressure	TBD
Maximum suction head:	
-1500 rev/min	10 kPa

Induction system	
Clean filter	2kpa
Dirty filter	3kpa
Air filter type	paper element

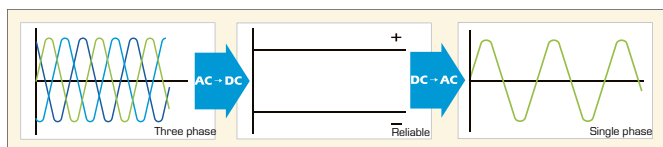
Lubrication system	
Total lub capacity	16.5L
Sump minimum	12.4L
Sump maximum	14.9L
Maximum engine operating angles	
-front up, front down, right side	
or left side	25°
Lubricating oil pressure	
-Relief valve opens	430kPa
- at maximum no-load speed	340kPa
Oil consumption at full load	
as a % of fuel consumption	<0.1

Electrical system	
Type	A115i
Alternator voltage	12 volts
Alternator output	85 amps
Starter motor voltage	12 volts
Starter motor power	4.0 kw

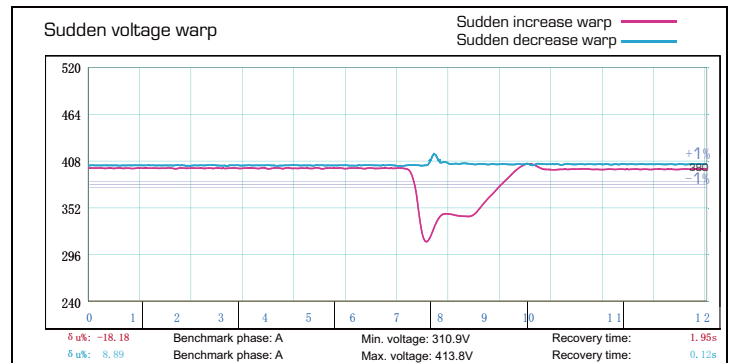
General installation	Prime power
Gross engine power	178.9kW
Brake mean effective pressure	2041.8kPa
Combustion air flow	12.6m ³ /min
Exhaust gas temperature outlet	580°C
Energy to charge coolers	32.8kW
Power to exhaust	148.1kW

■ Alternator Specification

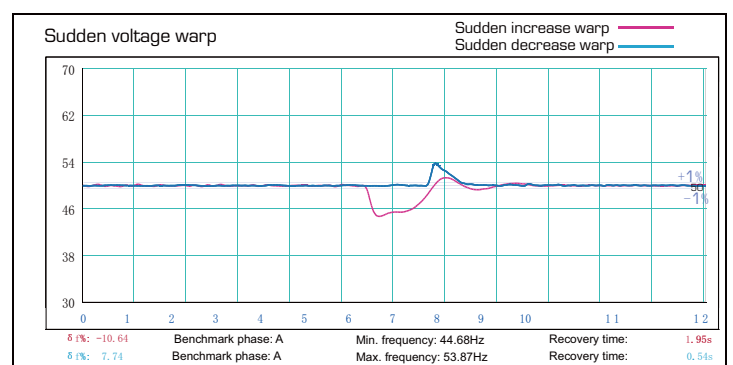
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



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 °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: $a= 500m/s^2$

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