

■ Model: P165D5

Powered by PERKINS

Output Rating

MODEL		Power rating		Voltage available
		PRIME(1)	STANDBY(2)	
P165D5	400V/50HZ	120KW	132KW	380/220V 400/230V 415/240V
	PF:0.8	150KVA	165KVA	

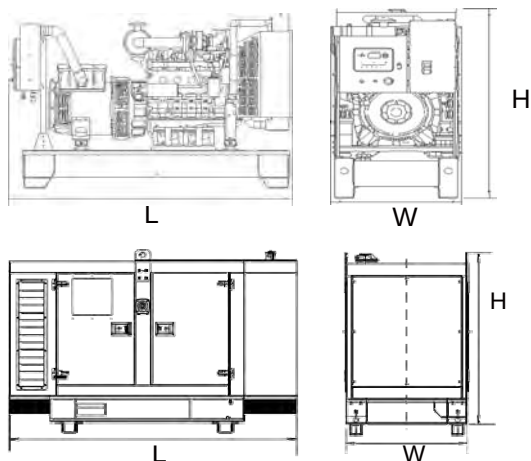
General Information

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Model		P165D5
Engine		1106A-70TAG2
Speed control type		ECM
Phase		3
Control System		Digital
System voltage		12V
Frequency		50HZ
Engine Speed(RPM)		1500
Fuel Consumption (L/H)	Standby power(2)	36.1
	Prime Power(1)	33.4
	75% prime power	24.7
	50% prime power	16.4



Dimension and Weight

Dimension	Open	Silent
Length (L)	2620mm	3400mm
Width (W)	770mm	1100mm
Height (H)	1570mm	1900mm
Net Weight	1416KG	2234KG



AGG POWER gensets are compliant with EC mark 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) Prime Power (PRP):

According to ISO 8528-1:2005, Prime power is the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operation conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output (Ppp) over 24h of operation shall not exceed 70% of the PRP.

(2) Standby Power (ESP):

According to ISO 8528-1:2005, standby power is the maximum power available during a variable electrical power sequence, under the stated operation conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24h of operation shall not exceed 70% of the ESP.



Engine Specification

Basic technical data

Number of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Turbocharged and air charge cooled
Combustion system	Direct injection diesel
Compression ratio	16 : 1
Bore	105 mm
Stroke	135 mm
Cubic capacity	7.01 litres
Direction of rotation	Anticlockwise when viewed from flywheel
Firing order	1, 5, 3, 6, 2, 4
Estimated total weight (dry)	788 kg
Estimated total weight (wet)	822 kg

Electrical system

Alternator	A115i
Alternator voltage	12 volts
Alternator output	85 amps
Starter	AZF
Starter motor voltage	12 volts

Exhaust system

Maximum back pressure - 1500 rpm	6.0 kPa
Exhaust outlet, internal diameter	72 mm

Lubrication system

Maximum total system oil capacity	16.5 litres
Minimum oil capacity in sump	12.4 litres
Maximum oil capacity in sump	14.9 litres
Maximum engine operating angles -	
Front up, front down, right side, left side	25°
Sump drain plug tapping size	3/4 - 16 UNF
Shutdown switch setting (where fitted)	
Oil pressure shut down switch	90 kPa Falling

Cooling system

Cooling pack

Overall weight (wet)	70 kg
Overall face area	524800 mm ²
Width	724 mm
Height	1090 mm

Radiator

Face area	351200 mm ²
Number of rows and materials	4 rows, Aluminium
Matrix density and material	10 fins per inch, Aluminium
Width of matrix	439 mm
Height of matrix	800 mm
Pressure cap setting (Min.)	100 kPa

Charge cooler

Face area	173,600 mm ²
Number of rows and materials	2 rows, Aluminium
Matrix density and material	10 fins per inch, Aluminium
Width of matrix	220 mm
Height of matrix	789 mm

Fan

Diameter	610 mm
Drive ratio	1,2:1
Number of blades	7
Material	Nylon
Type	Pusher
Air flow @ 1500 rpm	282 m ³ /min
Power @ 1500 rpm	5 kW

Coolant

Total system capacity	21 litres
System drawdown capacity	10%
Engine capacity	9.5 litres
Maximum top tank temperature	110°C
Temperature rise across engine	
(Max. rating dependent)	6°C - 12°C
Max. permissible external system resistance	35 kPa
Thermostat operation range	82°C to 93°C

General installation

General Installation	Units	Prime	Standby
Gross engine power	kW	136	153.6
Brake mean effective pressure	kPa	1552.1	1752.9
Mean piston speed	m/s	6.8	
ElectropaK net engine power	kW	131	144.1
Engine coolant flow (against 35 kPa restriction)	l/min	142	
Combustion air flow (at STP)	m ³ /min	10.02	10.67
Exhaust gas flow (Max.)	m ³ /min	23.78	25.53
Exhaust gas temperature (Max) in manifold (after turbocharger)	°C	484	
Net engine thermal efficiency	%	39.46	39.18
Typical genset electrical output (0.8pf 25°C)	kWe	120	132
	kVA	150	165
Regenerative power (estimated)	kW	6.9	
Assumed alternator efficiency	%	91.6%	91.6%
Energy balance			
Heat in fuel	kW	331.99	367.77
Power to cooling fan	kW	5	
Power to coolant and lubricating oil	kW	69.1	75.7
Power to exhaust	kW	96.6	105.6
Energy to charge coolers	kW	17.5	20.5
Power to radiation	kW	11	12.2



■ Alternator

Alternator		
Poles	Num	4
Winding Connections (standard)		Star-serie
Insulation	Class	H class
Enclosure (according IEC-34-5)		IP23
Exciter System		Brushless
Voltage Regulator		A.V.R. (Electronic)
Bearing		Single bearing
Coupling		Flexible disc
Coating type		Standard (Vacuum impregnation)

■ Options

Engine	Alternator	Generator Sets	Fuel System	Canopy
•Water Jacket Preheater •Oil Preheater	•Winding Temperature measuring Instrument •Alternator Preheater •PMG •Anti-damp and anti-corrosion treatment •Anti-condensation heater	•Tools with the machine	• Low fuel level alarm •Automatic fuel feeding system •Fuel T-valves	•Rental Type Canopy •Trailer
Lubricating System	Exhaust System	Cooling System	Control Panel	Voltages
•Oil with the machine	•Protection board from hotness	• Front heat protection • Coolant (-30°C)	•Remote control panel • ATS • Remote controller • Synchronizing controller	• 415/240V • 380/220V • 220/127V • 220/127V • 200-115V



Control Panel



Product description

- Single gen-set controller for Stand-by and Prime-power applications
- Direct communication with EFI engines
- Total remote monitoring and control

Key features

- Easy to install, configure and use
- Wide range of communication capabilities including:
 - connection via RS232, RS485, CAN and on board USB
 - internet access using Ethernet or GPRS
 - support for Modbus and SNMP protocols
- Cloud-based monitoring and control
- Active SMS and emails in different languages
- 2x 5 A binary outputs for cranking and fuel solenoid
- Option for up to 16 additional binary inputs/outputs
- Flexible event based history with up to 350 events
- Load shedding, dummy load capability
- Automatic temperature based cooling/heating
- Comprehensive gen-set protections
- Multipurpose flexible timers
- True RMS measurement

Available extension modules

Product	Description	Order code
CM-Ethernet	Ethernet interface	CM2ETHERXBX
CM-GPRS	GSM modem / wireless internet	CM2GPRSXXBX
CM-RS232-485	Dual port interface	CM223248XBX
EM-BIO8-EFCP	8 additional binary inputs/outputs	EM2BIO8EXBX

Functions and protections

Description	ANSI code	Description	ANSI code
Over voltage	59	Load shedding	32P
Under voltage	27	Overload	32
Voltage asymmetry and Phase rotation**	47	Power factor	55
Over frequency	81H	Temperature	49T
Under frequency	81L	Gas (fuel) level	71
Over current*	50 + 51	Earth fault current	50N + 64
Current unbalance	46		

* Short current only

** Fixed setting

