Model:P1850D5

Powered by PERKINS

Output Rating

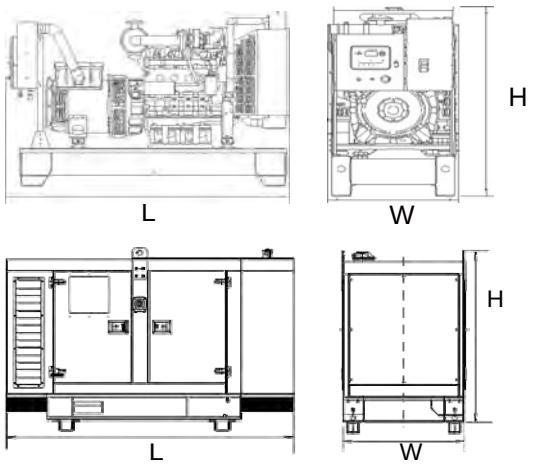
MODEL		Power rating		Voltage available
		PRIME(1)	STANDBY(2)	
P1850D5	400V/50HZ	1320KW	1480KW	380/220V 400/230V 415/240V
	PF:0.8	1650KVA	1850KVA	

General Information

Model		P1850D5
Engine		4012-46TAG3A
Speed control type		Electronic
Phase		3
Control System		Digital
System voltage		12V/24V
Frequency		50HZ
Engine Speed(RPM)		1500
Fuel Consumption L/hr	Standby power(2)	405
	Prime Power(1)	380
	75% prime power	275
	50% prime power	187

Dimension and Weight

Dimension	Open	Silent
Length (L)	5030mm	12192mm
Width (W)	2180mm	2438mm
Height (H)	2600mm	2896mm
Net Weight	13800KG	20320KG



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 caried 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 . ... .12
Cylinder arrangement ... ...Vee, 60°
Cycle. ... ... 4 stroke
Induction system... ... ... Turbocharged
Combustion system .. .. direct injection
Compression ratio 13:1
Bore .. .. 160 mm
Stroke .. .. 190 mm
Cubic capacity .. .. 45·842 litres
Direction of rotation .. .. clockwise, viewed on flywheel
Firing order ... ...1^A,6^B,5^A,2^B,3^A,4^B,6^A,1^B,2^A,5^B.4^A,3^B
Cylinder 1 . ...furthest from flywheel
Note: Cylinders designated 'A' are on the right hand side of the engine when

Overall dimensions of ElectropaK

	Unit	Tropical	Temperate
Height	mm	2260	2230
Length	mm	3971	3951
Width	mm	2192	1777

Moment of inertia

Engine .. .. .9,73 kgm²
Flywheel ... ... .9,57 kgm²

Cooling system

Recommended coolant: 50% inhibited ethylene glycol or 50% inhibited propylene glycol and 50% clean fresh water. For combined heat and power systems (CHP) and where there is no likelihood of ambient temperature below 10 °C, then clean 'soft' water may be used, treated with 1% by volume of Perkins inhibitor in the cooling system. The inhibitor is available in 1 litre bottles from Perkins under part number 21825 735.
Maximum pressure in crankcase water jacket ... ... 170 kPa
Maximum top tank temperature (standby) . ... 98 °C
Maximum static pressure head on pump ... ... 7 m

Total coolant capacity

Electrounit (engine only) ... ... 73 litres
Electropak (engine and radiator):
-temperate.. ... ... 207 litres
-tropical .. .. 210 litres
Maximum permissible restriction to coolant pump flow.. ... . 20 kPa
Thermostat operating range... ... ... 71 - 85 °C
Ambient cooling clearance (standby power) based on air temperature at fan 6 °C above ambient.
Temperature rise across the engines (standby power) with inhibited coolant @ 1500 rev/min . ... 8 °C
Coolant temperature shutdown switch setting ... ... 101 °C rising
Coolant immersion heater capacity (2 off) . ... 4 kWe each

Radiator

Temperate
Radiator face area . ... 2,57 m²
Material and number of rows:
-charge air and water jacket... ... ... .copper, 4 rows
Fins per inch and material:
-charge air and water jacket... ... ... brass, 12 rows
Width of matrix ... ... 1,608 m
Height of matrix.. ... ... 1,601 m
Weight of radiator... ... ... 1117 kg
Pressure cap setting (min) . ... 70 kPa

Tropical
Radiator face area . ... 3,46 m²
Material and number of rows:
-charge air and water jacket... ... ... .copper, 4 rows
Fins per inch and material:
-charge air and water jacket... ... ... brass, 12 rows
Width of matrix ... ... 2,10 m
Height of matrix.. ... ... 1,65 m
Weight of radiator... ... ... 1620 kg
Pressure cap setting (min) . ... 70 kPa

4012-46TAG3A - Temperate

Designation	Units	Type of operation and application		
		Spill Timing 18°		
		Baseload power	Prime power	Standby power
		50 Hz 1500 rev/min		
Gross engine power	kWm	1260	1500	1643
Fan and battery charging alternator power	kW	64		
Nett engine power	kWm	1196	1436	1579
Brake mean effective pressure (gross)	kPa	2192	2610	2859
Combustion air flow at ISO conditions	m³/min	115	125	135
Exhaust gas temperature (max) after turbo	°C	N/A	N/A	480
Exhaust gas flow (max) at atmospheric pressure	m³/min	N/A	N/A	350
Boost pressure ratio	-	3,0	3,4	3,7
Mechanical efficiency	%	89	91	92
Overall thermal efficiency (nett)	%	41,5	41,0	39,0
Friction power and pumping losses	kWm	120		
Mean piston speed	m/s	9,5		
Engine coolant flow	l/s	1020		
Typical Genset electrical output (0.8pf)	kVA	1420	1705	1875
	kWe	1136	1364	1500
Assumed alternator efficiency	%	95		

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	Descritption	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