

Model: P50D5

Powered by PERKINS

Output Rating

MODEL		Power rating		Voltage available		
		PRIME(1)	STANDBY(2)			
P50D5	400V/50HZ	36KW	40KW	380/220V	400/230V	415/240V
	PF:0.8	45KVA	50KVA			

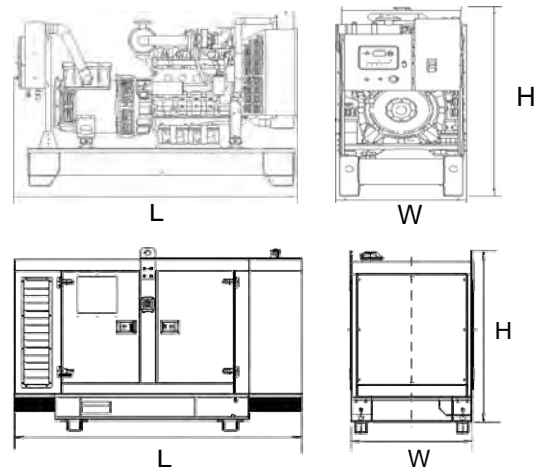
General Information

Model	P50D5	
Engine	1103A-33TG1	
Speed control type	Mechanical	
Phase	3	
Control System	Digital	
System voltage	12V	
Frequency	50HZ	
Engine Speed(RPM)	1500	
Fuel Consumption (L/H)	Standby power(2)	12
	Prime Power(1)	10.7
	75% prime power	8.2
	50% prime power	5.7



Dimension and Weight

Dimension	Open	Silent
Length (L)	1850mm	2450mm
Width (W)	750mm	1080mm
Height (H)	1430mm	1865mm
Net Weight	870KG	1426KG



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 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 3
 Cylinder arrangement Vertical in-line
 Cycle Four stroke
 Induction system Turbocharged
 Compression ratio 17.25 : 1
 Bore 105 mm (4.13 in)
 Stroke 127 mm (4.99 in)
 Cubic capacity 3.3 litres
 Direction of rotation Clockwise view from front
 Firing order 1,2,3
 Total weight (engine only)
 -dry 420 kg
 -wet 438 kg

Overall dimensions

-height 951 mm (37.44 in)
 -length 1049 mm (41.29 in)
 -width (including mounting brackets) 634 mm (24.96 in)

Moment of inertia (mk²)

Engine:
 - longitudinal 25 kgm²
 - horizontal 42 kgm²
 - axial 25 kgm²
 Flywheel (polar) 1.14 kgm²

Centre of gravity (wet)

- forward from rear of block 215 mm (8.46 in)
 - above centre line of block 120 mm (4.72 in)
 - offset of RHS of centre line 25 mm (0.98 in)

Cooling system

Radiator

- face area 0.276 m² (2.97 ft²)
 - rows and materials single row aluminium
 - matrix density and material Aluminium 12.5 fins/inch
 - width of matrix 526 mm (20.7 in)
 - height of matrix 524 mm (20.6 in)
 - pressure cap setting 107 kPa

Fan

- diameter 457 mm (18 in)
 - drive ratio 0.85 : 1
 - number of blades 7
 - material Composite
 - type Pusher

Coolant

Total system capacity
 - with radiator 10.2 l (21.5 pt)
 - without radiator 4.4 l (9.2 pt)
 Maximum top tank temperature 110 °C (230 °F)
 Thermostat operating range 82 - 93 °C (180 - 199 °F)
 Recommended coolant: 50 % ethylene glycol with a corrosion inhibitor (BS 658 : 1992 or MOD AL39) and 50% clean fresh water.

General installation

Designation	Units	Type of Operation and Application			
		Prime	Stand-by	Prime	Stand-by
		50 Hz	50 Hz	60 Hz	60 Hz
Gross engine power	kWm	42,2	46,5	50,5	55,6
Brake mean effective pressure	kPa (lbf/in ²)	1023 (148.3)	1128 (163.6)	1020 (147.9)	1124 (163.0)
Mean piston speed	m/s (ft/s)	6,35 (20.8)	6,35 (20.8)	7,62 (25.0)	7,62 (25.0)
ElectropaK net engine power	kWm	41,3	45,6	48,8	53,9
Engine coolant flow 35 kPa restriction	l/min (UK gal/min)	125,5 (27.6)	125,5 (27.6)	151,0 (33.2)	151,0 (33.2)
Combustion air flow	m ³ /min (ft ³ /min)	2,9 (102.4)	3,1 (109.4)	3,7 (130.6)	3,9 (137.7)
Exhaust gas flow (max)	m ³ /min (ft ³ /min)	7,0 (247.2)	7,7 (271.9)	8,8 (310.7)	9,5 (335.4)
Exhaust gas temperature (max) in manifold	°C (°F)	492 (917.6)	537 (999.6)	510 (950.0)	551 (1023.8)
Cooling fan air flow	m ³ /min (ft ³ /min)	53,0 (1871.6)	53,0 (1871.6)	70,0 (2472.0)	70,0 (2472.0)
Overall thermal efficiency	%	39,8	38,7	39,3	39,1
Typical genset electrical unit (0.8 pf 25° C)	kWe	36,0	39,7	42,5	46,9
	kVA	45,0	49,6	53,1	58,7
Assumed alternator efficiency	%	87%			
Energy balance					
Power in fuel (Fuel heat of combustion)	kW (Btu/min)	106,0 (6033.4)	120,0 (6830.3)	129,0 (7342.6)	142,0 (8082.5)
Power output (gross)	kW (Btu/min)	42,2 (2402.0)	46,5 (2646.7)	50,5 (2874.4)	55,6 (3164.7)
Power to cooling fan	kW (Btu/min)	0,9 (51.2)	0,9 (51.2)	1,7 (96.7)	1,7 (96.7)
Power output (net)	kW (Btu/min)	41,3 (2350.7)	45,6 (2595.5)	49,0 (2789.0)	53,9 (3067.9)
Power to coolant and lubricating oil	kW (Btu/min)	26,0 (1479.9)	30,0 (1707.5)	31,0 (1764.5)	34,0 (1935.2)
Power to exhaust	kW (Btu/min)	30,0 (1707.5)	35,0 (1992.1)	39,0 (2219.8)	43,0 (2447.5)
Power to radiation	kW (Btu/min)	7,0 (398.4)	8,0 (455.3)	8,0 (455.3)	9,0 (512.2)



▪ 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
<ul style="list-style-type: none"> •Water Jacket Preheater •Oil Preheater 	<ul style="list-style-type: none"> •Winding Temperature measuring Instrument •Alternator Preheater •PMG •Anti-damp and anti-corrosion treatment •Anti-condensation heater 	<ul style="list-style-type: none"> •Tools with the machine 	<ul style="list-style-type: none"> • Low fuel level alarm •Automatic fuel feeding system •Fuel T-valves 	<ul style="list-style-type: none"> •Rental Type Canopy •Trailer
Lubricating System	Exhaust System	Cooling System	Control Panel	Voltages
<ul style="list-style-type: none"> •Oil with the machine 	<ul style="list-style-type: none"> •Protection board from hotness 	<ul style="list-style-type: none"> • Front heat protection • Coolant (-30°C) 	<ul style="list-style-type: none"> •Remote control panel • ATS • Remote controller • Synchronizing controller 	<ul style="list-style-type: none"> • 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

