Model:P88D5

Powered by PERKINS

Output Rating

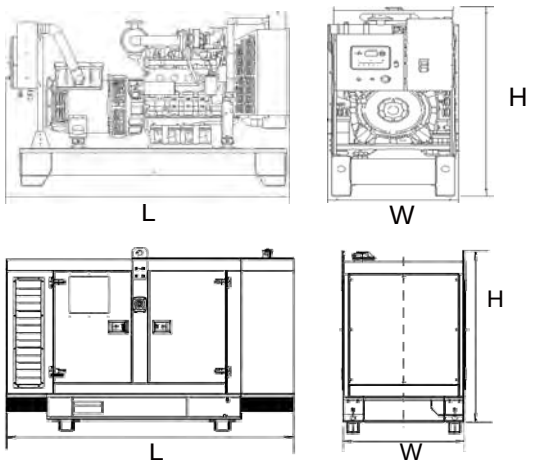
MODEL		Power rating		Voltage available
		PRIME(1)	STANDBY(2)	
P88D5	400V/50HZ	64KW	70KW	380/220V 400/230V 415/240V
	PF:0.8	80KVA	88KVA	

General Information

Model		P88D5
Engine		1104A-44TG2
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)	20.5
	Prime Power(1)	18.7
	75% prime power	14
	50% prime power	9.7

Dimension and Weight

Dimension	Open	Silent
Length (L)	2220mm	2550mm
Width (W)	750mm	1100mm
Height (H)	1530mm	1632mm
Net Weight	1018KG	1675KG



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 4
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 .. .. 4.4 litres
Direction of rotation... ... ... .Clockwise view from front
Firing order 1,3,4,2
Total weight (engine only)
-dry ... ...463 kg
-wet... ... ...485 kg

Exhaust system

Maximum back pressure
- 1500 rev/min ... ... .10 kPa
- 1800 rev/min ... ... .15 kPa
Exhaust outlet size . ... .64 mm (2.5 in)

Fuel System

Type of injection . ... Direct
Fuel injection pump ... ... Rotary
Fuel atomiser.. ... ... Multi-hole
Nozzel opening pressure ... ... .29,0 MPa (290 bar)

Lubrication system

Lubricating oil capacity

Total system... ... ...8,0 l (16.9 pt)
Sump minimum .. ..5,5 l (11.6 pt)
Sump maximum . ... 7,0 l (14.7 pt)

Cooling system

Radiator

- face area. ... ... 0.276 m² (2.97 ft²)
- rows and materials.. ... ... double 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.. ... ... 457,0 mm (18 in)
- drive ratio ... ... 1,25 : 1
- number of blades 7
- material ... ... Composite
- type . ... Pusher

Coolant

Total system capacity
- with radiator ... ...13,0 l (27.4 pt)
- without radiator ... ... 7,0 l (14.7 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.

Electrical system

Type .. ..Negative ground
Alternator voltage.. ... ...12 V
Alternator output ... ... 65 amps
Starter motor voltage. ... ...12 V

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	73,4	80,7	84,5	93,0
Brake mean effective pressure	kPa (lbf/in²)	1335 (193.6)	1467 (212.7)	1280 (185.6)	1409 (204.3)
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	71,9	79,1	82,0	90,2
Engine coolant flow 35 kPa restriction	l/min (UK gal/min)	142 (31.2)	142 (31.2)	170 (37.3)	170 (37.3)
Combustion air flow	m³/min (ft³/min)	4,8 (169.5)	5,14 (181.5)	6,2 (218.9)	6,5 (229.5)
Exhaust gas flow (max)	m³/min (ft³/min)	12,5 (441.4)	13,3 (469.6)	15,0 (529.7)	15,85 (559.7)
Exhaust gas temperature (max) in manifold	°C (°F)	555 (1031)	580 (1076)	535 (995)	560 (1040)
Cooling fan air flow	m³/min (ft³/min)	89,0 (3143.0)	89,0 (3143.0)	111,0 (3919.9)	111,0 (3919.9)
Overall thermal efficiency	%	39,5	39,5	38,5	39,5
Typical genset electrical unit (0.8 pf 25° C	kWe	64,0	70,4	73,0	80,3
	kVA	80,0	88,0	91,3	100,3
Assumed alternator effiency	%	89%			
Energy balance					
Power in fuel (Fuel heat of combustion)	kW (Btu/min)	186,0 (10587.0)	204,0 (11611.6)	220,0 (12522.3)	236,0 (13433.0)
Power output (gross)	kW (Btu/min)	73,4 (4177.9)	80,7 (4593.4)	84,5 (4809.7)	93,0 (5293.5)
Power to cooling fan	kW (Btu/min)	1,5 (85.3)	1,6 (91.0)	2,5 (142.2)	2,8 (159.3)
Power output (net)	kW (Btu/min)	71,9 (4092.5)	79,1 (4502.3)	82,0 (4667.4)	90,2 (5134.1)
Power to coolant and lubricating oil	kW (Btu/min)	46,0 (2618.3)	51,0 (2902.9)	53,0 (3016.7)	57,0 (3244.4)
Power to exhaust	kW (Btu/min)	53,0 (3016.7)	59,0 (3358.2)	68,0 (3870.5)	71,0 (4041.2)
Power to radiation	kW (Btu/min)	13,0 (739.9)	14,0 (796.8)	14,0 (796.8)	15,0 (853.7)

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