

Model: P1850D5

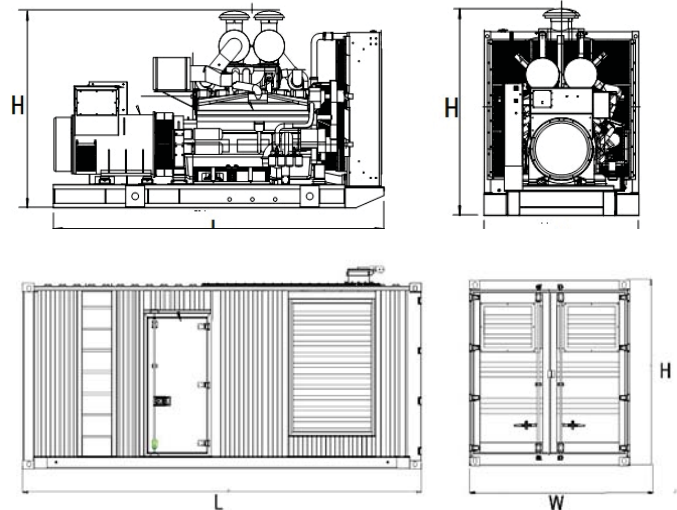
Powered by PERKINS

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)	4550mm	12192mm
Width (W)	2010mm	2438mm
Height (H)	2520mm	2896mm
Net Weight	10500KG	NA

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 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

Electronit (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 kW 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	m ³ /min	115	125	135
Exhaust gas temperature (max) after turbo	°C	N/A	N/A	480
Exhaust gas flow (max) at atmospheric pressure	m ³ /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.
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: AMF20



Benefits

- Less wiring and components
- Integrated solution
- Less engineering and programming
- Perfect price/performance ratio

Features

- Support of engines equipped with Electronic Control Unit (J1939 interface)
- Comprehensive diagnostic messages; SPN/FMI codes; KWP2000 support
- Automatic or manual start/stop of the gen-set
- Push buttons for simple control, lamp test
- Graphic back-lit LCD display 128x64 pixels
- 6 LED indicators
- Parameters adjustable via keyboard or PC
- Generator C.B. and Mains C.B. control with feedback and return timer
- RS232 interface (AT-LINK CONV cable is necessary for IL-AMF 20)
- Modem communication support (IL-AMF 25 only)
- Dimensions 180x120 mm (front panel)
- Sealed to IP65

- Mains measurements (50/60 Hz): U1-U3, Hz
- Generator measurements (50/60 Hz): U1-U3, I1-I3, Hz, kW, kVAr, kWh
- Selectable protections alarm/shutdown
- 3 phase Generator protections
 - Over-/under voltage
 - Over-/under frequency
 - Current/voltage asymmetry
 - Overcurrent/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

The Chart of Functions of IntelLite[®] Controllers

FUNCTIONS/CONTROLLERS	IL-AMF 20	IL-AMF 25	IL-MRS 10	IL-MRS 15	IL-MRS 11	IL-MRS 16
Binary inputs/outputs	7 / 7	7 / 7	6 / 6	6 / 6	6 / 6	6 / 6
Analog inputs	3	3	3	3	3	3
Pick-up	•	•	•	•	•	•
AMF function	•	•	-	-	-	-
Input configuration	•	•	•	•	•	•
Output configuration	•	•	•	•	•	•
Voltage measurement Gen./Mains	3ph / 3ph	3ph / 3ph	3ph / -	3ph / -	3ph / -	3ph / -
Current measurement	3ph	3ph, IDMT overcurrent	3ph	3ph, IDMT overcurrent	3ph	3ph, IDMT overcurrent
kW/kWh measurement	• / -	• / •	• / -	• / •	• / -	• / •
GCB/MCB control with feedback	• / •	• / •	- / -	- / -	• / -	• / -
Extension units (periph.)	-	IGL-RA15, IG-IOM, IGS-PTM	-	IGL-RA15, IG-IOM, IGS-PTM	-	IGL-RA15, IG-IOM, IGS-PTM
Communication interfaces	RS232 ²⁾	RS232, CAN ³⁾	RS232 ²⁾	RS232, CAN ³⁾	RS232 ²⁾	RS232, CAN ³⁾
Modem support	-	•	-	•	-	•
Battery charging alternator circuit	•	•	•	•	•	•

Key: • included; - excluded
 1) GCB control, but without feedback
 2) For IL-AMF 20, IL-MRS 10/11
 AT-LINK CONV cable necessary
 3) CAN for periph.

Legend: IG-IOM/IGS-PTM: I/O extension modules
 IGL-RA15: Remote annunciator
 I-RD: Remote display

