OPK1100

INDUSTRIAL
DIESEL GENERATOR SET

SPECIFICATION SHEET

ORSONPOWER® diesel generator set is a fully integrated power generation system providing optimum performance, reliability and versatility for stationary standby and prime power applications.

FEATURES

ORSONPOWER® diesel engine - Rugged 4-cycle, industrial diesel engine with excellent transient performance. Lightweight, compact and excellent fuel economy. Spin on fuel filter with pre-filter water separator.

ORSONPOWER® brushless alternator, single-bearing alternator featuring a revolving field and four-pole construction. Designed with class H insulation and IP23 protection for enhanced durability. It includes a fully interconnected damper winding, an AC exciter, and a rotating rectifier assembly. The stator windings are epoxy coated, while both the rotor and exciter are impregnated with polyester resin, offering strong resistance to oil, acids, and tropical environmental conditions.

Utilizing low-reactance 2/3 pitch windings, the alternator ensures minimal waveform distortion under non-linear loads and offers reliable short-circuit fault-clearing capabilities.

General Specifications

Genset model	OPK1100
Manufacturer	ORSONPOWER®
Engine model	ODK12ET3210G3
Alternator model	OF800AT-S5
Voltage, V	400/230
Frequency, hz	50
Phase	3
Controller	ORSON IGC5830
Performance Class	G2
One step load acceptance	>80%

GENERATOR SET OUTPUT RATING

MODEL	Voltage (V)	Prime Rating		Standby Rating		Continuous Rating	
		50hz kW/kVA	60hz kW/kVA	50hz kW/kVA	60hz kW/kVA	50hz kW/kVA	60hz kW/kVA
OPK1100	400/230	800/1000	-	880/1100	-	-	-

RATINGS DEFINITIONS

Emergency Standby Power (ESP): The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Emergency Standby Power (ESP) is in accordance with ISO 8528 and ISO3046.

Prime Power (PRP): Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 8528 and ISO3046.

Data Center Continuous Power (COP): Applicable for supplying back-up power for data center applications evaluated at specific site conditions. This rating is based on load profiles and performance requirements consistent with the data center industry. This rating is site specific and changes in application type or location would require further consideration.

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ENGINE SPECIFICATIONS	
Engine brand	ORSONPOWER®
Model	ODK12ET3210G3
Emission stage comply with	-
Engine speed, rpm	1500
Engine type	V type, water-cooled, Turbo charged, air-air after-cooler
Max. power at rated rpm, kWm (BHP)	970 (1300)
No. of cylinders and build	12
Bore and stroke, mm	150*150
Compression ratio	15:1
Total displacement, L	32.1
Governor	Electric
Fuel injection system	Direct Injection
Air cleaner type	Dry
Lubricating System	
Lub. method	Fully forced pressure feed type
Oil pump	Gear type driven by crankshaft
Oil filter	Full flow, cartridge type
Oil pan capacity, L	110
Lub. Oil	Refer to Operation Manual
Fuel System	
Feed pump	Electric
Injection nozzle	Multi hole type
Fuel filter	Full flow, cartridge type
Fuel Consumption	
POWER	L/h
25%	59.2
50%	135.7
75%	175.2
100%	209.5
*Fuel Specification	European RF75-T-96 / DIN EN590 / BS2869 class A2
Density (kg/l @ 15 ˚C)	0.835 - 0.845
Viscosity (mm2/s @ 40 ˚C)	2.5 - 3.5
Sulphur content (%)	0.1 - 0.2
Cetane number	45 - 50

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COOLING SYSTEM	
Cooling method	Forced circulation closed loop cooling
Water capacity, L (engine)	83
System designed for ambient temperature up to, °C	50
Thermostat, opening temp, ℃	77
Thermostat, full opening temp, ℃	87
Min. inside diameter of coolant outlet pipe, mm	45
Min. pressure in cooling system, kPa	50
INTAKE & EXHAUST SYSTEM	
Recommended air flow @ PRP, kg/h	5248
Recommended air flow @ ESP, kg/h	5563
Exhaust flow @ PRP, kg/h	5560
Exhaust flow @ ESP, kg/h	5821
Exhaust gas temp., °C	750
Max. permissible exhaust restrictions, kPa	7.5
ELECTRICAL SYSTEM	
Charging generator	28V×55A
Starting motor	24V×10kW
Battery Voltage, V	24
Battery Capacity, Ah	200*2
ALTERNATOR SPECIFICATION	
Alternator brand	ORSONPOWER®
Model	OF800AT-S5
Factor (Cos Phi)	0.8
Number of Phase	3
Bearing Number	1
Coupling	Direct
Exciter Type	PMG
Protection	IP23
Insulation Class, Temperature Rise	H/H
Overspeed capacity, Rpm	2250
Rated Speed (No-load to full load)	±0.5%
Voltage Regulation	±0.5%
Overcurrent Withstand Capability	300% (10 s)

- All 50 Hz models operate at 1500 r/min. All 60 Hz models operate at 1800 r/min
- Ratings apply up to 500 ft (152 m) altitude, 104° F (40° C) ambient with No. 2 diesel fuel
- Temperature: Power output decreases 1% for every 10° F (5.5° C) increase
- Altitude: Power output decreases 3.5% for every 1000 ft (305 m) increase

** Ambient is defined as the air temperature measured at the cooling air inlet to the set

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CONTROLLERS

Description

IGC5830 series genset controllers are used for genset automation and monitor control system of single unit to achieve automatic start/stop, data measuring, alarmprotection and “three remote” (remote control, remote measuring and remote communication). The controller adopts large liquid crystal display (LCD) and select-able Chinese, English or other languages interface with easy and reliable operation.
IGC5830 series genset controller adopts 32-bit micro-processor technology with precision parameters measuring, fixed value adjustment, time setting and threshold adjusting and etc. The majority of parameters can be set using front panel and all the parameters can be set using PC (via USB port) and can be adjusted and monitored with the help of RS485 ports. It can be widely used in a number of automatic genset control system with compact structure, simple connections and high reliability.

- AMF function
- Supportlanguagepackloading,multiplebuilt-inlanguages.Allowsselectionof4or8parametersfordisplay
- Supporthighvoltagegenset
- Blackboxfunctionallowsittorecord5itemsofdetaileddatafromtheoneminutepriortoshutdown
- RS485communicationport,supportsMODBUSprotocol
- Indicatescoolanttemperatureandlevel,oiltemperatureandpressure,voltage,current,frequency,enginespeed, fuellevel,andbatteryvoltage
- Adjustableautomatic/manualmode
- SMSfunction:canautomaticallyissuealarminformationto 5mobilessetpreviouslyorcheckgensetstatusbymessages
- GPSpositioningfunction:catchinggensetpositioninformation
- Eventlog,real-timeclock,scheduledstart&stop

Orson IGC2830

IGC2830 controllers is designed specifically for the starting, stopping, parameter monitoring, and fault monitoring of diesel and gas generator sets, and has parameter setting functions.This controller adopts a 3.5-inch 240*128 high-resolution LCDdisplay screen, a brand new UI design, and parameters aredisplayed through analog pointers and numbers. The LCD screencan simultaneously display multiple fault states and effectively implement protective shutdown when the generator set is not working properly.
The controller has built-in display interfaces in English, French, German, Vietnamese and other languages that can be selected, and the language interface can be customized.

- Adopting 32-bit original high-performance micro-controller control;
- 3.5-inch 240 * 128 large high-resolution LCD display screen
- The UI interface with pointer instrument and numerical display is a brand new original design that integrates dynamics and precision;
- The screen protector adopts hard screen acrylic material, which is wear-resistant and scratch resistant;
- Adopting silicone panel, effectively waterproof, oil resistant, UV resistant, with good operating feel and long service life;
- Equipped with a USB interface, parameters can be set and monitored in real-time through the USB interface, and parameters can be set when the controller is not powered on;
- Equipped with RS485 interface, the "three remote" function can be achieved using MODBUS protocol;
- Standard CAN communication interface, built-in J1939 protocol;
- Collect and display various engine and generator parameters;

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STANDARD FEATURES

ENGINE SYSTEM
- Stainless Steel Flexible Exhaust Connection
- Industrial Water-cooled Diesel Engine

Electrical System
- Battery Charging Alternator
- Battery Charger
- Battery Switch

Fuel System

Primary Fuel Filter

Cooling System
- Factory -Installed Radiator 40 'C

ALTERNATOR SYSTEM
- Class H Insulation Material
- Brushless Self-excited
- IP23 Class Structure

GENERATOR SET
- Industrial Steel Base Frame with Fuel Tank
- Internal Genset Vibration Isolation
- Exhaust Piping
- Intelligent Control Panel (DSE7320/ IGC2830)
- Circuit Breaker

OPTIONAL

ENGINE SYSTEM
- ☐ Oil Heater
- ☐ Critical Exhaust Silencer (open set)

Electrical System
- ☐ Battery Warmer
- ☐ Explosion-proof Electrical System
- ☐ Quick Connect Electrical Plugs
- ☐ IP65 Cabinet
- ☐ Password-lock Cabinet

ENCLOSURE
- ☐ Standard Enclosure
- ☐ Residential Class Enclosure (65db@7m)
- ☐ Galvanized
- ☐ Marine Class comply with DNV
- ☐ Sand-proof
- ☐ Automatic Fire Suppression System
- ☐ Fire Alarm System

ALTERNATOR SYSTEM
- ☐ Alternator Upsizing
- ☐ Anti-Condensation Heater
- ☐ PT100
- ☐ RTD Heater
- ☐ P.M.G
- ☐ IP54
- ☐ Explosion-proof Type

FUEL TANK
- ☐ External Fuel Tank
- ☐ Auto-filled Tank
- ☐ Bunded Fuel Tank

RADIATOR
- ☐ Remote Radiator
- ☐ 50’C Radiator
- ☐ 55’C Radiator
- ☐ Anti-Corrosion Coating
- ☐ Expansion Tank
- ☐ Jacket Water Heater

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SOUND ENCLOSURE

- Enclosure with internally mounted exhaust silencers.
- Sound-attenuated enclosure reduces noise using acoustic insulation, lined air inlets, and lined air discharge.
- High quality painting for various of weather
- Standard enclosure offers 20-30db noise reduction, which makes genset noise level lower 80db@7m
- Large, hinged and removable access doors provide easy service and maintenance.
- Lockable door latches for secure access.
- Air inlet louvers designed to minimize rain and snow intrusion.

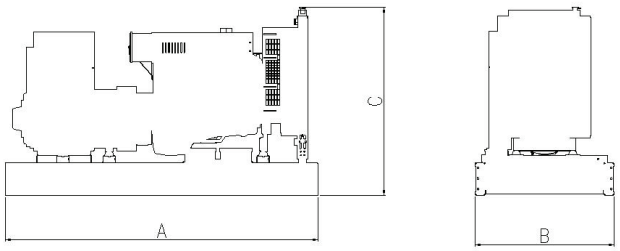
BASE FUEL TANK FEATURES

- The base fuel tank is fully integrated into the generator set base frame for compact installation and reduced footprint.
- Heavy-duty steel construction provides robust support for both generator and fuel load.
- A high-quality anti-corrosion coating ensures long-term durability and protection against rust and environmental damage.
- The tank includes a threaded drain valve for easy fuel maintenance and removal of water or sediment.
- Integrated forklift pockets and lifting hooks enable safe and efficient transportation and on-site handling.

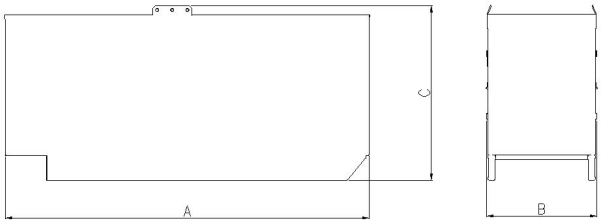
WEIGHT & DIMENSIONS

Open Type		
Overall Size	mm	4325*2060*2208
Weight	Kg	7590
Canopy Type		
Overall Size	mm	5656*2250*2563
Weight	Kg	11500
Base Fuel tank	L	500

OPEN TYPE



ENCLOSURE TYPE



*Outlines are for illustrative purposes only. Please refer to the genset outline drawing for an exact representation of this model.