

JCB ENERGY ELECTRIC POWER INDUSTRY











IVECO

















231 / 400 V - 50 Hz & 277 / 480 V - 60 Hz





GENERATOR GENERAL INFORMATION

GENERATOR	FREQUENCY	VOLTAGE	POWER FACTOR	SPEED	DIESEL ENGINE ALTERNATOR				TYPE OF	GENER	ATOR O	UTPUT		
Model	Hz	V	Cos Q	Rpm	Brand	Model	Series	Brand	Model	Series	Operation	kVA	kW	Α
	50	231/400			DOOSAN	DD2221 D	DD			355MX	Standby	770,0	616,0	1.112,7
JDD 770			0.8	1500							Prime	700,0	560,0	1.011,6
									ICD		Continuous	490,0	392,0	708,1
JDD 920	60	277/480	0.8		DOOSAN	DP222LB	DP	<u> </u>	JCB		Standby	920,0	736,0	1.329,5
				1800				: <u>,</u>		355MX	Prime	836,4	669,1	1.208,6
											Continuous	585,5	468,4	846,0

- Diesel Engines with Advanced Technology and Quality
- Alternators with Advanced Technology and Quality
- Low Exhaust Emission
- Control Panel Suitable for Flexible Application
- Patented Compact Designed and Sound proof Canopy
- Low Operating Cost, Suitable for Heavy-Duty
- Durability , Low Noise Level

- Tropical 50 °C Radiator, First Class Product Support
- Fuel Filter with Water and Particle Separator
- Low Fuel Consumption, Low Oil Consumption
- Global Technical Service and Maintenance Support
- Wide Range of Affordable Spare Parts
- High Quality and Reliable Technology
- Half Century Experience in Generator Manufacturing

STAND BY POWER RATING - (ESP):

ESP is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Stand by Power rating. This rating should be applied where reliable utility power is available. A Stand By rated engine should be sized for a maximum of an 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Stand by Power rating. Stand By ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

PRIME POWER RATING - (PRP):

Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

UNLIMITED TIME RUNNING PRIME POWER (ULTP):

PRP (Prime Power) is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

LIMITED TIME RUNNING PRIME POWER (LTP):

LTP (Limited Time Prime Power) is available for a limited number of hours in a no variable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation

CONTINUOUS POWER RATING (COP):

COP is the power that the engine can continue to use under the prescribed speed and the specified environment condition in the normal maintenance period stipulated in the manufacturing plant. And Continuous Power is applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.



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PAY ATTENTION TO THE POINTS BELOW IN PICKING AND USING THE GENERATOR

- * Generators can work on Continuous Power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high-quality oils that manufacturer advice.
- * Generators should not operate below 50% of Prime Power value. In such a case, the engine will burn excessive oil and eventually have irreparable damage.
- * If your need is 1000 kVA or above, you should prefer Synchronic Systems with 2-3 generators with failure back up and simultaneous aging.
- * These points will provide advantage for you with purchasing and operating the generator.

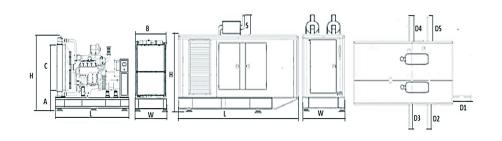
GENERATOR DIMENSIONS AND TECHNICAL DRAWINGS





VALUES		OPEN TYPE GENERATOR	CANOPY TYPE GENERATOR
WIDTH	mm	1400	1646
LENGTH	mm	3311	4632
HEIGHT	mm	1980	2641
WEIGHT (NET)	Kg	3476	4320
FUEL TANK CAPACITY	L	1066	400

SYMBOL	OPEN	CANOPY
L	3311	4632
W	1400	1646
Н	1980	2000
S		641
Α	560	
В	1200	
С	1200	
D1		1002
D2		800
D3		800
D4		800
D5		800



FUEL CONSUMPTION

PERCENT OF PRIME POWER	1500 rpm		1800 rpm		
TENGENT OF THIME TOWER	g/kWh	I/hr	g/kWh	l/hr	
110 %	200,0	157,2	200,0	185,1	
100 %	195,0	139,4	195,0	164,1	
75 %	197,0	105,6	197,0	124,3	
50 %	212,0	75,8	212,0	89,2	



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DIESEL ENGINE MAIN TECHNICAL PARAMETERS

GENERAL ENGINE DATA								
Engine Model		DP222LB	DP222LB					
Engine Type		4-Cycle, V-Type, 1	4-Cycle, V-Type, 12-Cylinder Diesel, Water Cooled, Turbo Charged & Intercoole					
Bore x Stroke		128 x 142 mm	128 x 142 mm					
Displacement		21.927 liters						
Compression Ratio		15: 1						
Rotation		Counter clockwise	viewed from Flyw	heel				
Firing Order		1-12-5-8-3-10-6-7	-2-11-4-9					
Fuel System		Bosch in-line "P" t	ype					
Governor		Electronic						
Governor Class		G3						
Cooling System								
Total System Coolant Capacity		23L						
Thermostat Operation Range		80~90°C	80~90°C					
Maximum Temperature to Engine		105°C	105°C					
Minimum Temperature to Engine		70°C	70°C					
Coolant Temperature Alarm		105°C	105°C					
Limits of the Environment Temperat	ure	52°C	52°C					
Lubrication System								
Lubrication Oil Capacity		40L						
Lubrication Oil Pressure		min 250 kPa (50Hz	min 250 kPa (50Hz) /min 300 kPa (60Hz)					
Lubrication Oil Temperature		At normal operation	At normal operation 105°C, Maximum 125°C					
Lubrication Oil Consumption as % Fu	iel Consumption	0.1 % maximum						
Pressure of Oil Relief Valve Opening		550 ± 50 kPa	550 ± 50 kPa					
Electrical System								
Alternator		28.5V x 45A alterr	28.5V x 45A alternator					
Starter Motor		24V x 7.0 kW	24V x 7.0 kW					
FAN								
Diameter		915mm	915mm					
Number Of Blade		9	9					
Material		Plastic						
	DOOSAN	INFRACORE GENSET	ENGINE					
Engine Model	rpm	Gross Engine C	Gross Engine Output(kWm) Typical Generator Output (kV					
Engine Model	1pm	Stand-by	Prime	Stand-by	Prime			
DP222LB	1500	664	604	780	710			
	1800	782	711	919	835			



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JCB ALTERNATOR TECHNICAL PARAMETERS AND SPECIFICATIONS



ALTERNATOR TECHNICA	L PARAMETERS								
Insulation Class			Н	Field Cont	trol System			9	Self-Excite
Winding Pitch			2/3 - (N° 6)	A.V.R. Mo	A.V.R. Model				SX44
Wires				Voltage R	egulation		%		±
Protection			IP 23	Sustained	Short-Circuit	Current	10 sec	;	300% (3 IN
Altitude	m		1000	Total Harı	monic (*) TGI	H / THC	%		<
Overspeed	r	pm	2250	Wave For	m: NEMA = T	IF - (*)			< 5
Air Flow	m³	/sec.	1,035	Wave For	m: I.E.C. = Th	IF - (*)	%		<
Bearing Drive	N	I/A	-	Bearing N	on-Drive		Bearing		6314-2R
Rotor Winding	10	00%	Copper	Stator Wi	nding		100%		Coppe
50 HZ / 231-400V COSQ	0,8 / 1500 RPM								
STANDARD USING ALTER	NATOR			OPTIONAL L	ISING ALTERN	IATOR			
BRAND/MODEL	JCBENERGY	JCB 355MX		LEROY-	SOMER"	TAL049B	STAMFORD	S5L1D-	G4
DUTY				Continuous			Stand By		
AMBIENT	C°			40°C				27°C	
CLASS / TEMP. RISE	C°			H/ 125° K			H	H/ 163° K	
SERIES STAR	V	380/220	400/231	415/240	1 Phase	380/220	400/231	415/240	1 Phas
PARALLEL STAR	V	190/110	200/115	208/120	220	190/110	200/115	208/120	220
SERIES DELTA	V	220	230	240	230	220	230	240	230
OUTPUT POWER	kVA	700,0	700,0	726,0	-	770,0	770,0	799,0	-
OUTPUT POWER	kW	560,0	560,0	580,8	-	616,0	616,0	639,2	-
60 HZ / 277-480V COSQ	0,8 / 1800 RPM								
STANDARD USING ALTER	RNATOR			OPTIONAL L	JSING ALTERN	IATOR			
BRAND/MODEL	JCB <u>ENERGY</u>	JCB 355MX		LERO	Y-SOMER	TAL049B	STAMFO	RD S5L1	D-F4
DUTY				Continuous			S	tand By	
AMBIENT	C°			40°C				27°C	
CLASS / TEMP. RISE	C°			H / 125° K			Н	/ 163° K	
SERIES STAR	V	416/240	440/254	480/277	1 Phase	416/240	440/254 4	80/277	1 Phase
PARALLEL STAR	V	208/120	220/127	240/138	-	208/120	220/127 2	40/138	-
SERIES DELTA	V	240	254	277	240	240	254	277	240
OUTPUT POWER	kVA	789,0	831,0	875,0	-	868,0	914,0	963,0	-
OUTPUT POWER	kW	631,2	664,8	700,0	-	694,4	731,2	770,0	-



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CONTROL MODULE ALERTS

Emergency Stop Malfunction
High Generator Frequency
Low Generator frequency, Low Load
Over Current, Unbalanced Current
Low Generator Voltage
High generator Frequency
Phase sequence error
Overload, Heat Sensor Broken
Low Water Level (Optional)
Low Oil Pressure, Reverse Power
Low Water Temperature

Start Error, Stop Error
Magnetic Pickup Error
Charge Alternator Error
Unbalanced Load
Maintenance Time Alarm
Low Speed, High Speed
Broken Oil Sensor Cable
High Oil Temperature (Optional)
Low Fuel Level (Optional), High Battery Voltage
Low Battery Voltage, High Water Temperature
Electronic Can bus Errors (ECU)

CONTROL PANEL SPECIFICATIONS





- Powder Painted Steel Panel with Lockable Door
- ATS (Automatic Transfer Panel)-Optional
- Control Module
- Battery Charger
- Emergency Stop Button

- Terminal Blocks
- o Load Output Terminal
- System Protection MSBs
- Circuit Breaker-Optional
- o LCD Screen
- Control Relays
- Backlit, 128x64 Pixels

CONTROL MODULE TECHNICAL PARAMETERS

Brand	JCHENERGY	Brand	Trans-MIDIAMF.232.GP
Dimensions	120mmx94mm.	Protection Class	IP65 From the Front
Weight	260 gr.	Environmental Conditions	2000 meters above sea level
Ambient Humidity	Max. %90.	Ambient Temperature	-20°C to +70°C
DC Battery Supply Voltage	8 - 32 V	Battery Voltage Measurement	8 – 32 V
Network Frequency	5 - 99,9 Hz	Mains Voltage Measurement	3 - 300 V phase -Neutral, 5 - 99,9 Hz
Generator Voltage Measurement	3 - 300 V	Generator Frequency	5 - 99,9 Hz
Current Transformer Secondary	5A	Working Period	Continuous
Charge Alternator Voltage Measurement	8 - 32 V	Charge Alternator Excitation	210mA &12V, 105mA &24V Nominal 2.5W
Communication Interface	RS-232	Analog Sender Measurement	0 - 1300ohm
Generator Contactor Relay Output	5A & 250V	Mains Contactor Relay Output	5A & 250V
Solenoid Transistor Outputs	1A with DC Supply	Start Transistor Outputs	1A with DC Supply
Configurable-3 Transistor Outputs	1A with DC Supply	Configurable-4 Transistor Outputs	1A with DC Supply



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CONTROL MODULE FUNCTION

Mains Voltage Level Control	Generator Voltage Level Control	3 Phase Generator Protections	3 Phase AMF Function	Alarm Horn
Network Frequency Level Control	Generator Frequency level Control	- High / Low Voltage	- High / Low Frequency	Heater Tube Thermostat Control
Engine Operating Option Control	Generator Current Level Control	- High / Low Frequency	- High / Low Voltage	Modbus and SNMP
Engine Stop Option Control	Generator Powder Level Control	- Current / Voltage Asymmetry	- High / Low Water Temperature	Working Hour
Engine Speed (RPM) Level Control	Generator work Schedule and Timing Control	- Overcurrent / Overload	- High / Low Load	Ground Leakage
Battery Voltage Options Times	Oil Pressure Controllers Control	Overheat Control	Mains., Generator ATS Control	Analog Modem
Check Engine Maintenance Times	Configurable Analog Inputs and Outputs	1 Phase or 3 Phase, Phase Selection	Network, Voltage, Frequency Display	Ethernet, USB, RS232, RS485
Communication Interfaces GPRS, GSM	Keeping Error Records of Past Events	Parameter Setting via Control Module	Parameter Setting via Computer	Selectable Protection Alarm / Shutdown
Engine Speed, Voltage, Earning	Configurable Programmable Digital Inputs and Outputs	Water Temperature Current and Frequency	Hours of Operation Phase sequence	Battery Voltage Oil Pressure

SOUND PROOF CANOPY AND BASE FRAME (CHASIS) SPECIFICATIONS



- Special, Registered JCB Energy Design and Colour
- A1 Quality DKP / HRU / Galvanized Steel
- Sensitive Twist on Automatic Press Brake
- Delicate Cut on Automatic Punch and Laser Bench
- Sensitive Welding on Robotic Welding Bench
- Chemical Cleaning Nano Technology Before Painting
- Robotic Painting with Electrostatic Powder Paint
- o Drying and stabilizing on 200 ºC Ovens
- 1500 Hour Salt Test
- o Glass wool Isolation, A1 Class Material -50/+500 ºC
- Special Covering Over Glass Wool
- Best Sound Level (in Dba)
- Temperature Tests
- Rustproof Accessories

- Cable Exit Connectors and Glands
- Emergency Stop Button
 Final Level Course
- Fuel Level Gauge
- Fuel Drain Cap
- Fuel Inlet and Return Records
- o I permeability Test for Fuel Tank
- Vacuumed Rubber Mounted
- High Quality weatherstrips
- High Quality Shock Absorbers
- Fuel Filling Cap (with ventilation)
- Lifting and Carrying Equipment
- Internal Exhaust Mufflers (Silencers)
- External Exhaust Mufflers (Silencers)
- Radiator water Filling Cap
- Daily Fuel Tank, External Fuel Tank

Our Quality Certificates

