

JCB ENERGY ELECTRIC POWER INDUSTRY

MADRID / SPAIN





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





GENERATOR GENERAL INFORMATION

GENERATOR	FREQUENCY	VOLTAGE	POWER FACTOR	SPEED	DIESEL E	NGINE		ALTERN	IATOR		TYPE OF	GENER	ATOR OUTP	UT	
Model	Hz	V	Cos Q	Rpm	Brand	Model	Series	Brand	Model	Series	Operation	kVA	kW	А	
								Ľ			Standby	1.400,0	1.120,0	2.023,1	
JCN 1400	50	231/400	0.8	1500						400L	Prime	1.272,7	1.018,2	1.839,2	
						A1732JCI	All	E.			Continuous	890,9	712,7	1.287,4	
					JCN	AT/3ZJCI	All	All T JCB Continue C JCB Standby C 400M Prime	Standby	1.400,0	1.120,0	2.023,1			
JCN 1400	60	277/480	0.8	1800					ģ		400M	Prime	1.272,7	1.018,2	1.839,2
											Continuous	890,9	712,7	1.287,4	
 Diesel Engines with Advanced Technology and Quality Alternators with Advanced Technology and Quality Fuel Filter with Water and Particle Separator 															

	• ruer mer mer mer mer andre separator
 Low Exhaust Emission 	 Low Fuel Consumption, Low Oil Consumption
 Control Panel Suitable for Flexible Application 	 Global Technical Service and Maintenance Support
 Patented Compact Designed and Sound proof Canopy 	 Wide Range of Affordable Spare Parts
 Low Operating Cost, Suitable for Heavy-Duty 	 High Quality and Reliable Technology
 Durability, Low Noise Level 	 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.

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

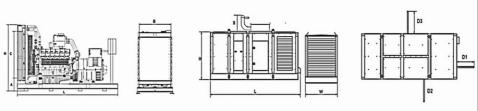




VALUES		OPEN TYPE GENERATOR	CANOPY TYPE GENERATOR		
WIDTH	mm	2000	2390		
LENGTH	mm	4500	6769		
HEIGHT	mm	2310	3156		
WEIGHT (NET)	Kg	7120	11500		
FUEL TANK CAPACITY	L	2250	2250		

SYMBOL	OPEN	CANOPY
L	4500	6769
W	2000	2390
н	2310	2356
S		800
Α	500	
В	1720	
С	1870	
D1		1298
D2		1044
D3		1044
D4		
D5		

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FUEL CONSUMPTION

PERCENT OF PRIME POWER	1500 rpm	1800 rpm		
	l/hr	l/hr		
110 %	276,28	276,28		
100 %	248,42	248,42		
75 %	187,26	187,26		
50 %	126,11	126,11		



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DIESEL ENGINE MAIN TECHNICAL PARAMETERS

GENERAL		
Number of Cylinders		12
Configuration		V-Type
Aspiration		Turbocharged & Intercooled
Combustion System		Direct Injection
Compression Ratio		15.5:1
Bore	mm	145
Stroke	mm	155
Displacement	L	32,7
Governing Type		Electronic
Governing Class		G3
Rotation		Counterclockwise
Firing Order		1-12-5-8-3-10-6-7-2-11-4-9
Emission		Tier II
Moments of Rotation Inertia		
Engine	Kg - m²	24,19
Flywheel	Kg - m ²	15,38
Performance Rating	16 11	19,50
Speed Droop	%	≤1
Steady State Speed Band	%	≤0,5
FILTERS	70	20,5
Air Filter		Dry Type, Replaceable
Fuel Filter		With Water Separator
Oil Filter		Element Type, Particulate Trap
FLYWHEEL HOUSING AND FLEX COUPLING		
Flywheel Housing	SAE (J620)	1
Flex Coupling Disc	Inch (")	14
TEST CONDITIONS		14
Ambient Temperature	%	25
Atmospheric Pressure	КРа	100
Relative Humidity	Rh (%)	30
Max. Operating Intake Resistance	KII (%)	<6,2
Exhaust Backpressure Limit	КРа	<6
Fuel Temperature (Fuel Inlet Pump)	°C	38±2
OVERALL DIMENSIONS		JU-2
Length*	mm	2330
Width	mm	1760
Height	mm	2135
Dry Weight *From front end of radiator to near end of air filter	kg	3550
FAN		
Diameter	mm	1530
Drive Ratio		1,04:1
Number of Blades		8
Material		Metal
Туре		Blowing



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DIESEL ENGINE MAIN TECHNICAL PARAMETERS

COOLING SYSTEM			
Radiator Type	50ºC	Tropical	
Total Coolant Capacity	L	240	
Max. Perm. Coolant Outlet Temperature	°C	105	
Max. Perm. Flow Resist. (Cool. System And Piping)	bar	0,5	
Max. Temperature of Coolant Warning	°C	95	
Max. Temperature of Coolant Shutdown	°C	98	
Thermostat Operation Temperature - Initial Open	ōC	66	
Thermostat Operation Temperature - Full Open	₅C	78	
Delivery of Coolant Pump	m ³/ h	14,50	
Min. Pressure Before Coolant Pump	bar	0,5	
Radiator Face Area	m²	3,21	
Rows	Row	7	
Matrix Density	Per / Inch	18	
Material		Aluminum	
Width of Matrix	mm	1720	
Height of Matrix	mm	1870	
Pressure Cap Setting	kPa	90	
Estimated Cooling Air Flow Reserve	kPa	0,125	
Engine Pre Heater-Tube (with Circulation Pump)	W	6600	
LUBRICATION SYSTEM			
Total System	L	90	
Minimum Oil Level	L	85	
Nominal Motor Operating Temperature	₅C	40	
Lubricating Oil Pressure (Rated Speed)	bar	7	
Relief Valve Opens	kPa	200	
Oil / Fuel Consumption Ratio	%	≤0,48	
Normal Oil Temperature	°C	110	
ELECTRICAL SYSTEM			
Voltage	V	24	
Starter	kW	13	
Alternator Output Ampers	А	60	
Alternator Output Voltage	V	28	
Batteries Capacity	Ah	2X200	



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JCB ENERGY DIESEL ENGINE POWER RATINGS

ENGINE MODEL	A1732JCI		ENGINE FAMILY	JC56	ENGINE SERIES	All	
		TYPICAL GENERATOR OUTPUT (NET)		ENGINE POWER			
Speed (Rpm)	Type of Operation			Gr	OSS	Net	
		kVA	kWe	KWm	Нр	kWm	Нр
1500	Stand By(Maximum)	1.403,0	1.122,0	1.200,0	1.610,7	1.169,0	1.569,1
	Prime	1.271,0	1.017,0	1.090,0	1.463,1	1.059,0	1.421,5
1800	Stand By(Maximum)	1.403,0	1.122,0	1.200,0	1.610,7	1.169,0	1.569,1
	Prime	1.271,0	1.017,0	1.090,0	1.463,1	1.059,0	1.421,5

DIESEL ENGINE MATCHING PARAMETERS - 50 HZ



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DIESEL ENGINE MATCHING PARAMETERS - 60 HZ

60 HZ @ 1800 R/MIN		STAND BY	PRIME
Gross Engine Power	kW	1200,0	1090,0
Net Engine Power	kW	1169,0	1059,0
Fan Power Consumption (Belt Pulley Driven)	kW	28,0	28,0
Other Power Loss	kW	3,0	3,0
Mean Effective Pressure	MPa	2,40	2,18
Intake Air Flow	m ³ / min	92,62	88,27
Exhaust Temperature Limit	°C	650	650
Exhaust Flow	m ³ / min	250,38	238,67
Boost Pressure Ratio		3,30	3,40
Mean Piston Speed	m / s	9,9	9,9
Cooling Fan Air Flow	m ³ / min	1875,0	1875,0
Typical Generator Output Power	kVA	1403	1271
HEAT REJECTION		STAND BY	PRIME
Energy in Fuel (Heat of Combustion)	kW	3165,0	2875,0
Gross Heat to Power	kW	1320,0	1199,0
Energy to Coolant and Lubricating Oil	kW	561,0	509,0
Heat Dissipation Capacity *	kW	236,0	215,0
Energy to Exhaust	kW	957,0	869,0
Heat to Radiation	kW	95,0	86,0
*Intake Intercooled system			

JCB ALTERNATOR TECHNICAL PARAMETERS AND SPECIFICATIONS



ALTERNATOR TECHNI	CAL PARAMETERS				
Insulation Class		Н	Field Control System		Self-Excited
Winding Pitch		2/3 - (N° 6)	A.V.R. Model	Standard	MX341+PMG
Wires		6	Voltage Regulation	%	± 1
Protection		IP 23	Sustained Short-Circuit Current	10 sec	300% (3 IN)
Altitude	m	1000	Total Harmonic (*) TGH / THC	%	< 4
Overspeed	rpm	2250	Wave Form: NEMA = TIF - (*)		< 50
Air Flow	m³/sec.	1,614	Wave Form: I.E.C. = THF - (*)	%	< 2
Bearing Drive	N/A	-	Bearing Non-Drive	Bearing	6317-2RZ
Rotor Winding	100%	Copper	Stator Winding	100%	Copper



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ALTERNATOR SPECIFICATIONS

50 HZ / 231-400V COSQ 0,8 / 1500 RPM STANDARD USING ALTERNATOR **OPTIONAL USING ALTERNATOR JCB 400L** BRAND/MODEL **JCBENERGY**[®] LSA 50.2M6 P7A LEROY-SOMER **STAMFORD** DUTY Continuous Stand By AMBIENT C° 40°C 27°C **CLASS / TEMP. RISE** C° H/ 163° K H/ 125° K **SERIES STAR** 380/220 400/231 415/240 1 Phase 380/220 400/231 415/240 1 Phase V PARALLEL STAR ٧ 190/110 200/115 208/120 220 190/110 200/115 208/120 220 SERIES DELTA V 220 230 240 230 220 230 240 230 **OUTPUT POWER** kVA 1273,0 1273,0 1321,0 -1400,0 1400,0 1453,0 _ **OUTPUT POWER** kW 1018,4 1018,4 1056,8 1120,0 1120,0 1162,4

60 HZ / 277-480V COSQ 0,8 / 1800 RPM

STANDARD USING ALTERNATOR				OPTIONAL USING ALTERNATOR					
BRAND/MODEL		JCB 400M		LEROY-S		L049E	STAMFO)RD	НС6Ј
DUTY				Continuous				Stand By	
AMBIENT	C°			40°C				27°C	
CLASS / TEMP. RISE	C°			H / 125° K				H / 163° K	
SERIES STAR	V	416/240	440/254	480/277	1 Phase	416/240	440/254	480/277	1 Phase
PARALLEL STAR	V	208/120	220/127	240/138	-	208/120	220/127	240/138	-
SERIES DELTA	V	240	254	277	240	240	254	277	240
OUTPUT POWER	kVA	1129,0	1188,0	1250,0	-	1242,0	1307,0	1375,0	-
OUTPUT POWER	kW	903,2	950,4	1000,0	-	993,6	1045,6	1100,0	-



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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)



- Powder Painted Steel Panel with Lockable Door
- ATS (Automatic Transfer Panel) Optional
- Control Module
- o Battery Charger
- Emergency Stop Button
- Terminal Blocks
 Load Output Terminal
 System Protection MSBs
 Circuit Breaker-Optional
- o LCD Screen
- Control Relavs
- o Backlit, 128x64 Pixel

CONTROL MODULE TECHNICAL PARAMETERS

CONTROL PANEL SPECIFICATIONS

Brand	JEBENERGY	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
- Drying and stabilizing on 200 °C Ovens
- o 1500 Hour Salt Test
- 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
- Fuel Level Gauge
- Fuel Drain Cap
- Fuel Inlet and Return Records
- 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
- o Internal Exhaust Mufflers (Silencers)
- External Exhaust Mufflers (Silencers)
- Radiator water Filling Cap
- Daily Fuel Tank, External Fuel Tank

Our Quality Certificates

Certificate of Registration a		Certificate of Registration a		
This is to certify that the Quality Management System of		This is to certify that the Environmental Management System of		
JCBENERGY		JEBENERGY		
JCB ENERGY ELECTRIC POWER INDUSTRY		JCB ENERGY ELECTRIC POWER INDUSTRY		
CALLE DE TRESPADERNE, NUN 7 PLANTA 3, PUERTA C 28042 MADRID - (MADRID), SPAIN		CALLE DE TRESPADERNE, NUM 7 PLANTA 3, PUERTA C 28042 MADRID - (MADRID), SPAIN		
is in accordance with the requirements of the following standard		is in accordance with the requirements of the following standard		
ISO 9001:2015 (Quality Management System)		ISO 14001:2015 (Environmental Management System)		
SCOPE		SCOPE		
RATOR AND GENERATOR COMPLEMENTS, WERTERS, SHUTTER POWER SUPPLIES				
(IAF Code: 18,19)		(AF Code: 18,19)		
hital Registration Date : 35-Sec-3020 11 Schwellinere Date : 35-Sec-3024 27 Schwellinere Date : 35-Sec-3025 Certificate Expty Date : 36-Sec-3026	Centices Number: 2010/2020	initial Registration Data : 25-047-0828 1" Serveillance Data : 25-047-2828 2" Surveillance Data : 25-549-2828 Centicute Euply Data : 24-047-828		
ttps://www.lafcertsearch.org/ Issued by ARS Assessment Private Limited		Issued by ARS Assessment Private Limited		
Managing Director		-Managing Director		
	anagement System of COWER INDUSTRY TA C 20042 MADRID - (MADRID), SPAIN ts of the following standard 2015 mt System) AND GENERATOR COMPLEMENTS, NEATOR AND GENERATOR COMPLEMENTS, NEATOR	enagement System of RECEV OWER INDUSTRY TA C 204E MADRID. (MADRID]. SPAN ts of the following standard 2015 mt System) Market Commentation 1 System (Market Commentation) Market Commentation Market Commentation		







Certificate

JEBENERGY

JCB ENERGY ELECTRIC POWER INDUSTRY

CALLE DE TRESPADERNE, NUM ? PLANTA 3, PUERTA C 28642 MADRID - (MADRID), SPAIN

In reception of the organization's Manegoments System which complex with

ISO 22716:2013:GMP GOOD MANUFACTURING PRACTICES The scope of methodise control by this conflictor is defined below

MANUFACTURING, XALIS AND SERVICE OF GENERATOR AND GENERATOR COMPLEMENTS, WATER PUMP, FORKLIFT, UPS, REGULATOR, CONVERTERS, SHUTTER POWER SUPPLIES

Confficute Number : GCR/CERT-11.2023.3585 Confficute Fund Date : 01.11.2023 Confficute Fadialty : 31.31.2024

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Approval





Certificate

HEALTHY & SAFE

WORKPLACE CERTIFICATE

JCB ENERGY ELECTRIC POWER INDUSTRY

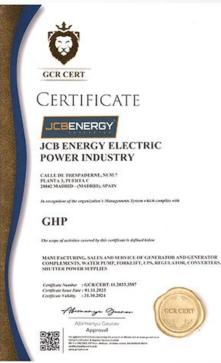
CALLE DE TRESPADERNE, NUN 7 PLANTA & PETRETA C 2006 MARDING - OADBRIDS, PAIN B has been entried to obtain a Healthy and Sele Workslase Conflicts by fulfiling the regimements for COVI-55 measures, within the physical conditions of the Dubries with in the regime of the Nealthy and Sele Workslase Ended on the Dubries

FACTORIES - PRODUCTION LOCATIONS: ELECTRICAL AND ELECTRONICS INDUSTRY

Certifican Number : GCR:CERT-11.2023.3650 Certifican Inac Date : 07.31.2023 Certifican Fullity : 06.31.2024













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