JCB ENERGY ELECTRIC POWER INDUSTRY

MADRID / SPAIN

JCBENERGY

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231 / 400 V – 50 Hz





GENERATOR GENERAL INFORMATION

GENERATOR	FREQUENCY	VOLTAGE	POWER FACTOR	SPEED	DIESEL EN	IGINE		ALTERN	ATOR		TYPE OF	GENER	ATOR O	UTPUT
Model	Hz	V	Cos Q	Rpm	Brand	Model	Series	Brand	Model	Series	Operation	kVA	kW	А
											Standby	900,0	720,0	1.300,6
JCC 900	50	231/400	0.8	1500	Cummins	QSK23G3	QSK	ENERGY	JCB	355LX	Prime	818,2	654,5	1.182,3
								Υ ^Ω Υ			Continuous	572,7	458,2	827,6
								·≺,			Continuous	572,7	458,2	827,

 Diesel Engines with Advanced Technology and Quality 	 Tropical 50 °C Radiator, First Class Product Support
 Alternators with Advanced Technology and Quality 	 Fuel Filter with Water and Particle 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.

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.

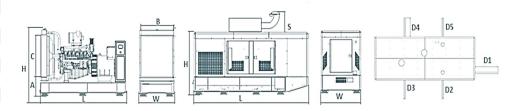
GENERATOR DIMENSIONS AND TECHNICAL DRAWINGS





VALUES		OPEN TYPE GENERATOR	CANOPY TYPE GENERATOR
WIDTH	mm	1400	1942
LENGTH	mm	4000	5166
HEIGHT	mm	2188	2920
WEIGHT (NET)	Kg	4358	5650
FUEL TANK CAPACITY	L	1193	530

SYMBOL	OPEN	CANOPY
L	4000	5166
W	1400	1942
н	2188	2282
S		638
Α	560	
В	1302	
С	1446	
D1		1057
D2		961
D3		961
D4		961
D5		961





231 / 400 V – 50 Hz



DIESEL ENGINE MAIN TECHNICAL PARAMETERS

GENERAL		
Number of Cylinders		6
Configuration		Vertical, in line
Aspiration		Turbo Charged&Aftercooled
Combustion System		Direct injection
Compression Ratio		16:1
Bore	mm	170
Stroke	mm	170
	mm L	
Displacement	L	23,15
Governing Type		Electronic
Governing Class		G3
Rotation		Counterclockwise
Firing Order		1-5-3-6-2-4
Emission		Non-Regulated
FILTERS		
Air Filter		Dry Type, Replaceable
Fuel Filter		With Water Separator
Oil Filter		Element Type, Particulate Trap
LUBRICATION SYSTEM		
Total System	L	103
Minimum Oil Level	L	80
Nominal Motor Operating Temperature	ēC	50
Lubricating Oil Pressure (Rated Speed)	bar	5,2
Relief Valve Opens	kPa	200-280
Oil / Fuel Consumption Ratio	%	<0,1
Normal Oil Temperature	°C	120
FUEL CONSUMPTION		
Standby - Load 110%	L/h	178,60
Prime - Load 100%	L/h	164,00
Prime - Load 75%	L/h	126,04
Prime - Load %50	L/h	88,49
COOLING SYSTEM		
Radiator Type	50ºC	Tropical
Total Coolant Capacity	L	120
Max. Perm. Coolant Outlet Temperature	ōC	110
Max. Perm. Flow Resist. (Cool. System And Piping)	bar	0,5
Max. Temperature of Coolant Warning	°C	95
Max. Temperature of Coolant Shutdown	ΩC	98
Thermostat Operation Temperature - Initial Open	°C	82
Thermostat Operation Temperature - Full Open	°C	93
	m ³ / h	4,80
Delivery of Coolant Pump		
Delivery of Coolant Pump Min. Pressure Before Coolant Pump		
Min. Pressure Before Coolant Pump	bar	0,25
Min. Pressure Before Coolant Pump Radiator Face Area	bar m²	0,25 1,68
Min. Pressure Before Coolant Pump Radiator Face Area Rows	bar m² Row	0,25 1,68 3
Min. Pressure Before Coolant Pump Radiator Face Area Rows Matrix Density	bar m²	0,25 1,68 3 12
Min. Pressure Before Coolant Pump Radiator Face Area Rows Matrix Density Material	bar m² Row Per / Inch	0,25 1,68 3 12 Aluminum
Min. Pressure Before Coolant Pump Radiator Face Area Rows Matrix Density Material Width of Matrix	bar m ² Row Per / Inch mm	0,25 1,68 3 12 Aluminum 1250
Min. Pressure Before Coolant Pump Radiator Face Area Rows Matrix Density Material Width of Matrix Height of Matrix	bar m ² Row Per / Inch mm mm	0,25 1,68 3 12 Aluminum 1250 1350
Min. Pressure Before Coolant Pump Radiator Face Area Rows Matrix Density Material Width of Matrix Height of Matrix Pressure Cap Setting	bar m ² Row Per / Inch mm mm kPa	0,25 1,68 3 12 Aluminum 1250 1350 90
Min. Pressure Before Coolant Pump Radiator Face Area Rows Matrix Density Material Width of Matrix Height of Matrix	bar m ² Row Per / Inch mm mm	0,25 1,68 3 12 Aluminum 1250 1350





DIESEL ENGINE MAIN TECHNICAL PARAMETERS

ELECTRICAL SYSTEM			
Voltage	V	24	
Starter	kW	8	
Alternator Output Ampere	A	35	
Alternator Output Voltage	V	28	
Batteries Capacity	Ah	2x143	
FAN			
Diameter	mm	1200	
Drive Ratio		1.2:1	
Number of Blades		9	
Material		Metal	
Туре		Blowing	

DIESEL ENGINE MATCHING PARAMETERS - 50 HZ

50 HZ @ 1500 R/MIN		STAND BY	PRIME
Gross Engine Power	kW	768,0	698,2
Net Engine Power	kW	746,0	678,2
Fan Power Consumption (Belt Pulley Driven)	kW	14,0	14,0
Other Power Loss	kW	8,0	8,0
Mean Effective Pressure	MPa	2653,00	2653,00
Intake Air Flow	m ³ / min	53,28	53,28
Exhaust Temperature Limit	ōC	543	543
Exhaust Flow	m ³/ min	147,70	147,70
Boost Pressure Ratio		65,00	65,00
Mean Piston Speed	m / s	8,5	8,5
Cooling Fan Air Flow	m ³/ min	810,0	810,0
Typical Generator Output Power	kVA	895	814
Alternator Efficiency	%	96,0	96,0
HEAT REJECTION		STAND BY	PRIME
Energy in Fuel (Heat of Combustion)	kW	1555,0	1555,0
Gross Heat to Power	kW	768,0	768,0
Energy to Coolant and Lubricating Oil	kW	215,0	215,0
Energy to Exhaust	kW	507,0	507,0
Heat to Radiation	kW	65,00	65,00



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ALTERNATOR SPECIFICATIONS



ALTERNATOR TECHNICA	L PARAMETERS				
Insulation Class		Н	Field Control System		Self-Excited
Winding Pitch		2/3 - (N° 6)	A.V.R. Model	Standard	MX341+PMG
Wires		12	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.	1,035	Wave Form: I.E.C. = THF - (*)	%	< 2
Bearing Drive	N/A	-	Bearing Non-Drive	Bearing	6314-2RZ
Rotor Winding	100%	Copper	Stator Winding	100%	Copper

50 HZ / 231-400V COSQ 0,8 / 1500 RPM

STANDARD USING ALT	ERNATOR			OPTIONAL U	SING ALTERN	IATOR			
BRAND/MODEL		JCB 355LX		LEROY-SO	OMER [™]	TAL049C	STAMFORD	LV6D	
DUTY				Continuous				Stand By	
AMBIENT	C°			40°C				27°C	
CLASS / TEMP. RISE	C°			H/ 125° K			I	Н/ 163° К	
SERIES STAR	V	380/220	400/231	415/240	1 Phase	380/220	400/231	415/240	1 Phase
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	850,0	850,0	882,0	-	935,0	935,0	970,0	-
OUTPUT POWER	kW	680,0	680,0	705,6	-	748,0	748,0	776,0	-



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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
- Battery Charger
- Emergency Stop Button
- Terminal Blocks
 Load Output Terminal
 System Protection MSBs
 Circuit Breaker-Optional
- o LCD Screen
- Control Relays
- o Backlit, 128x64 Pixel

CONTROL MODULE TECHNICAL PARAMETERS

CONTROL PANEL SPECIFICATIONS

Brand	JCBENERGY	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



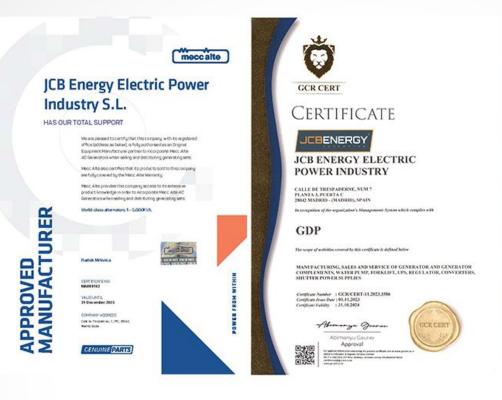
- Special, Registered JCB Energy Design and Colour
- A1 Quality DKP / HRU / Galvanized Steel
- Sensitive Twist on Automatic Press Brake
- Delicate Cut on Automatic Punch and Laser Bench
- Sensitive Welding on Robotic Welding Bench
- Chemical Cleaning Nano Technology Before Painting
- Robotic Painting with Electrostatic Powder Paint
- Drying and stabilizing on 200 °C Ovens
- 1500 Hour Salt Test
- Glass wool Isolation, A1 Class Material -50/+500 ℃
- 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
- Internal Exhaust Mufflers (Silencers)
- External Exhaust Mufflers (Silencers)
- Radiator water Filling Cap
- Daily Fuel Tank, External Fuel Tank

Our Quality Certificates

legistration 🔊	Certificate of Re	egistration 👝		
lanagement System of	This is to certify that the Environmental Management System of			
RGY	JCBENER	RGY		
OWER INDUSTRY	JCB ENERGY ELECTRIC PO	WER INDUSTRY		
ITA C 28042 MADRID - (MADRID), SPAIN	CALLE DE TRESPADERNE, NUM 7 PLANTA 3, PUERT	A C 28042 MADRID - (MADRID), SPAIN		
ts of the following standard	is in accordance with the requirements	of the following standard		
ISO 9001:2015 (Quality Management System)		ISO 14001:2015 (Ervironmental Management System)		
	SCOPE			
RATOR AND GENERATOR COMPLEMENTS, WERTERS, SHUTTER POWER SUPPLIES				
(,19)	(IAF Code: 18,1	9)		
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		
Issued by ARS Assessment Private Limited		Issued by ARS Assessment Private Limited		
Managing Director		-Managing Director		
	CLIAF DAD			
	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 2004E MADRID (MADRID]. SPAN ts of the following standard 20155 mt System) Market Control Contro		







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

Abimarya Gaurae Abimarya Gaurae Approval

Approval





GCRCERI

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

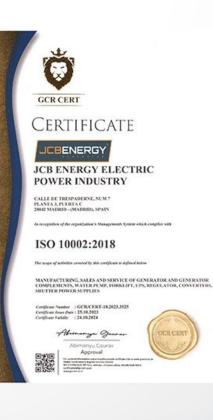
FACTORIES - PRODUCTION LOCATIONS: ELECTRICAL AND ELECTRONICS INDUSTRY

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



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