# JCB ENERGY ELECTRIC POWER INDUSTRY

MADRID / SPAIN

JCBENERGY

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# JVP 425

### 231 / 400 V – 50 Hz





### **GENERATOR GENERAL INFORMATION**

GENERATOR	FREQUENCY	VOLTAGE	POWER FACTOR	SPEED	DIESEL EN	IGINE	ALTERN	ATOR		TYPE OF	GENER OUTPU		
Model	Hz	V	Cos Q	Rpm	Brand	Model	Brand	Model	Series	Operation	kVA	kW	А
							L L			Standby	425,0	340,0	614,2
JVP 425	50	231/400	0.8	1500	Volvo	TAD1343GE	ENE	JCB	315M	Prime	386,4	309,1	558,3
	Penta Penta	θCY.	RGY				Continuous	270,0	216,0	390,2			

<ul> <li>Diesel Engines with Advanced Technology and Quality</li> <li>Alternators with Advanced Technology and Quality</li> </ul>	<ul> <li>Tropical 50 °C Radiator, First Class Product Support</li> <li>Fuel Filter with Water and Particle Separator</li> </ul>
<ul> <li>Low Exhaust Emission</li> <li>Control Panel Suitable for Flexible Application</li> </ul>	<ul> <li>Low Fuel Consumption, Low Oil Consumption</li> <li>Global Technical Service and Maintenance Support</li> </ul>
<ul> <li>Patented Compact Designed and Sound proof Canopy</li> </ul>	<ul> <li>Wide Range of Affordable Spare Parts</li> </ul>
<ul> <li>Low Operating Cost, Suitable for Heavy-Duty</li> <li>Deschilite Level Naire Level</li> </ul>	High Quality and Reliable Technology
<ul> <li>Durability, Low Noise Level</li> </ul>	<ul> <li>Half Century Experience in Generator Manufacturing</li> </ul>

### 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.



231 / 400 V – 50 Hz





# 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.

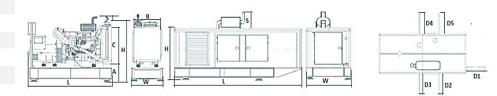
### **GENERATOR DIMENSIONS AND TECHNICAL DRAWINGS**





VALUES		OPEN TYPE GENERATOR	CANOPY TYPE GENERATOR
WIDTH	mm	1200	1600
LENGTH	mm	3266	4600
HEIGHT	mm	2103	2280
WEIGHT (NET)	Kg	3270	4154
FUEL TANK CAPACITY	L	673	400

SYMBOL	OPEN	CANOPY
L	3266	4600
W	1200	1600
н	2103	2280
S	210	500
Α	880	
В	890	
С	900	
D1		1002
D2		800
D3		800
D4		800
D5		800



PERCENT OF PRIME POWER	FUEL CONSUMPTION				
	l/hr				
110 %	90,2				
100 %	81,2				
75 %	60,4				
50 %	41,6				





### **DIESEL ENGINE MAIN TECHNICAL PARAMETERS**

GENERAL		
Number of Cylinders		6
Configuration		Vertical, in line
Aspiration		Turbo Charged & CAC
Combustion System		Direct injection
Compression Ratio		18.1:1
Bore	mm	131
Stroke	mm	158
Displacement	L	12,78
Governing Type		Electronic
Governing Class		G3
Rotation		Counterclockwise
Firing Order		1-5-3-6-2-4
Emission		EU Stage 2
FILTERS		Ŭ
Air Filter		Dry Type, Replaceable
Fuel Filter		Element type, Replaceable
Oil Filter		Element Type, Particulate Trap
ELECTRICAL SYSTEM		
Voltage	V	24
Starter	kW	7
Alternator Output Ampers	А	80
Alternator Output Voltage	V	28
Batteries Capacity	Ah	2x105
FAN		
Diameter	mm	890
Drive Ratio		0.99:1
Number of Blades		9
Material		Composite
Туре		Blowing
COOLING SYSTEM		
Radiator Type	50ºC	Tropical
Total Coolant Capacity	L	44
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	°C	82
Thermostat Operation Temperature - Full Open	°C	92
Delivery of Coolant Pump	m ³/ h	5,00
Min. Pressure Before Coolant Pump	bar	0,5
Radiator Face Area	m²	0,8
Rows	Row	2
Matrix Density	Per / Inch	12
Material		Aluminum
Width of Matrix	mm	890
Height of Matrix	mm	900
Pressure Cap Setting	kPa	90
Estimated Cooling Air Flow Reserve	kPa	0,125
Engine Pre Heater-Tube (with Circulation Pump)	W	3000





### **DIESEL ENGINE MAIN TECHNICAL PARAMETERS**

LUBRICATION SYSTEM		
Total System	L	36
Minimum Oil Level	L	30
Nominal Motor Operating Temperature	₅C	55
Lubricating Oil Pressure (Rated Speed)	bar	5,2
Relief Valve Opens	kPa	300
Oil / Fuel Consumption Ratio	%	0,04
Normal Oil Temperature	°C	130

# **DIESEL ENGINE MATCHING PARAMETERS - 50 HZ**

50 HZ @ 1500 R/MIN		STAND BY
Gross Engine Power	kW	366,0
Net Engine Power	kW	356,0
an Power Consumption (Belt Pulley Driven)	kW	10,0
Other Power Loss	kW	-
Mean Effective Pressure	MPa	2100,00
ntake Air Flow	m <sup>3</sup> /min	25,90
xhaust Temperature Limit	°C	408
xhaust Flow	m ³/ min	57,00
Boost Pressure Ratio		12,00
Mean Piston Speed	m / s	7,9
Cooling Fan Air Flow	m <sup>3</sup> / min	348,0
Typical Generator Output Power	kVA	425
HEAT REJECTION		STAND BY
nergy in Fuel (Heat of Combustion)	kW	782,0
Gross Heat to Power	kW	343,0
nergy to Coolant and Lubricating Oil	kW	144,0
nergy to Exhaust	kW	213,0
leat to Radiation	kW	10,0
Mean Piston Speed Cooling Fan Air Flow Typical Generator Output Power HEAT REJECTION Energy in Fuel (Heat of Combustion) Gross Heat to Power Energy to Coolant and Lubricating Oil	m <sup>3</sup> / min kVA kW kW kW	7,9 348,0 425 <b>STAND BY</b> 782,0 343,0 144,0



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### **ALTERNATOR SPECIFICATIONS**



ALTERNATOR TECHNICAL	L PARAMETERS				
Insulation Class		н	Field Control System		Self-Excited
Winding Pitch		2/3 - (N° 6)	A.V.R. Model	Standard	SX440
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.	0.8	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

# **ALTERNATOR SPECIFICATIONS**

50 HZ / 231-400V COSQ 0,8 / 1500 RPM									
STANDARD USING ALTE	ERNATOR			OPTIONAL U	SING ALTERN	IATOR			
BRAND/MODEL	JCBENERGY	JCB 315M		LEROY-SO	OMER	TAL047A	STAMFORD	S4L1DF	
DUTY				Continuous			-	Stand By	
AMBIENT	C°			40°C				27°C	
CLASS / TEMP. RISE	C°			Н/ 125° К				H/ 163° K	
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	409,0	409,0	424,0	-	450,0	450,0	467,0	-
OUTPUT POWER	kW	327,0	327,0	339,0	-	360,0	360,0	374,0	-



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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
- o Control Module
- Battery Charger
- Emergency Stop Button
- Terminal BlocksLoad Output Terminal
- System Protection MSBs
- Circuit Breaker-Optional
- 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







# **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	<ul> <li>Current / Voltage</li> <li>Asymmetry</li> </ul>	- 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



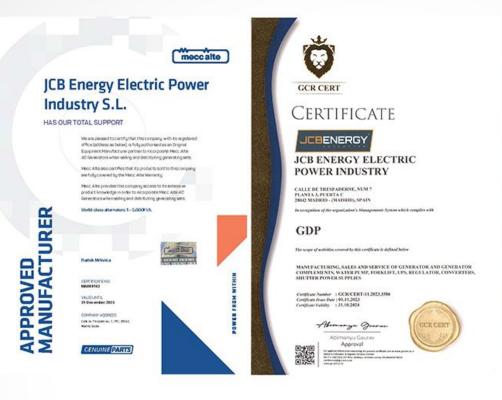
- Special, Registered JCB Energy Design and Colour
- A1 Quality DKP / HRU / Galvanized Steel
- Sensitive Twist on Automatic Press Brake
- Delicate Cut on Automatic Punch and Laser Bench
- Sensitive Welding on Robotic Welding Bench
- Chemical Cleaning Nano Technology Before Painting
- Robotic Painting with Electrostatic Powder Paint
- Drying and stabilizing on 200 °C Ovens
- 1500 Hour Salt Test
- o 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 Registration a	
lanagement System of	This is to certify that the Environmental Management System of	
RGY	JCBENERGY	
OWER INDUSTRY	JCB ENERGY ELECTRIC POWER INDUSTRY	
ITA C 28042 MADRID - (MADRID), SPAIN	CALLE DE TRESPADERNE, NUM 7 PLANTA 3, PUERTA C 28042 MADRID - (MADRID), SPAN	
ts of the following standard	is in accordance with the requirements of the following standard	
:2015 nt System)	ISO 14001:2015 (Environmental Management System)	
	SCOPE	
RATOR AND GENERATOR COMPLEMENTS, WERTERS, SHUTTER POWER SUPPLIES		
(,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
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 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





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### Certificate

HEALTHY & SAFE WORKPLACE CERTIFICATE

JCB ENERGY ELECTRIC POWER INDUSTRY

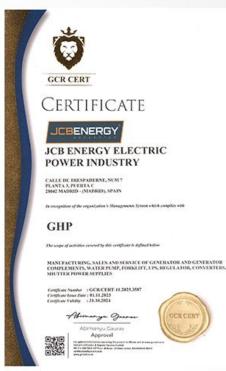
CALLE DE TRESPADERNE, NUN 7 PLANTA & PETRETA C 2006 MARDING - OADBRIDS, PAIN B has been entried to obtain a Healthy and Sele Workslase Conflicts by fulfiling the regimements for COVI-55 measures, within the physical conditions of the Dubries with in the regime of the Nealthy and Sele Workslase Ended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

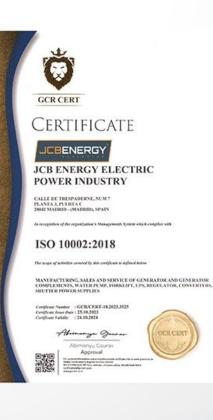
FACTORIES - PRODUCTION LOCATIONS: ELECTRICAL AND ELECTRONICS INDUSTRY

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



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