



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





#### **GENERATOR GENERAL INFORMATION**

GENERATOR	FREQUENCY	VOLTAGE	POWER FACTOR	SPEED	DIESEL ENGINE		ALTERNATOR		TYPE OF	GENERATOR OUTPUT		TPUT			
Model	Hz	V	Cos Q	Rpm	Brand	Model	Series	Brand	Model	Series	Operation	kVA	kW	А	
											Standby	850,0	680,0	1.228,3	
JCN 850	50	231/400	0.8	1500		JCN B1051JCI B				355L	Prime	772,7	618,2	1.116,7	
									JCB		Continuous	540,9	432,7	781,7	
					JCN		BIOSIICI	CI BII		JCB		Standby	960,0	768,0	1.387,3
JCN 960	60	277/480	0.8	1800				ធ្វ័		355MX	Prime	872,7	698,2	1.261,2	
								<u>,</u>			Continuous	610,9	488,7	882,8	

<ul> <li>Diesel Engines with Advanced Technology and Quality</li> </ul>	<ul> <li>Tropical 50 °C Radiator, First Class Product Support</li> </ul>
<ul> <li>Alternators with Advanced Technology and Quality</li> </ul>	<ul> <li>Fuel Filter with Water and Particle Separator</li> </ul>
<ul> <li>Low Exhaust Emission</li> </ul>	<ul> <li>Low Fuel Consumption, Low Oil Consumption</li> </ul>
<ul> <li>Control Panel Suitable for Flexible Application</li> </ul>	<ul> <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> </ul>	<ul> <li>High Quality and Reliable Technology</li> </ul>
<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.

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**

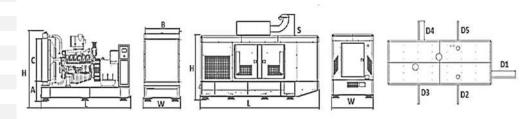




VALUES		OPEN TYPE GENERATOR	CANOPY TYPE GENERATOR		
WIDTH	mm	1400	1942		
LENGTH	mm	4000	5166		
HEIGHT	mm	2188	2920		
WEIGHT (NET)	Kg	4250	5540		
FUEL TANK CAPACITY	L	1193	530		

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

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#### **FUEL CONSUMPTION**

PERCENT OF PRIME POWER	1500 rpm	1800 rpm		
	l/hr	l/hr		
110 %	168,06	189,94		
100 %	154,52	174,35		
75 %	116,48	131,43		
50 %	78,44	88,51		



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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	128
Stroke	mm	155
Displacement	L	23,922
Governing Type	L	Electronic
Governing Lass		G3
Rotation		Counterclockwise
Firing Order		1-12-5-8-3-10-6-7-2-11-4-9
Emission		Tier II
Moments of Rotation Inertia	V 2	4.54
Engine	Kg - m²	4,54
Flywheel	Kg - m²	2,1
Performance Rating		
Speed Droop	%	≤0,5
Steady State Speed Band	%	≤0,5
FILTERS		
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		
Ambient Temperature	%	25
Atmospheric Pressure	КРа	100
Relative Humidity	Rh (%)	30
Max. Operating Intake Resistance	КРа	<5
Exhaust Backpressure Limit	КРа	<10
Fuel Temperature (Fuel Inlet Pump)	°C	38±2
OVERALL DIMENSIONS		
Length*	mm	2075
Length* Width	mm	1456
Length* Width Height	mm mm	1456 1558
Length* Width Height Dry Weight	mm	1456
Length* Width Height	mm mm	1456 1558
Length* Width Height Dry Weight *From front end of radiator to near end of air filter	mm mm	1456 1558 1820 950
Length* Width Height Dry Weight *From front end of radiator to near end of air filter FAN Diameter Drive Ratio	mm mm kg	1456 1558 1820 950 1,15:1
Length* Width Height Dry Weight *From front end of radiator to near end of air filter <b>FAN</b> Diameter Drive Ratio Number of Blades	mm mm kg	1456 1558 1820 950 1,15:1 7
Length* Width Height Dry Weight *From front end of radiator to near end of air filter FAN Diameter Drive Ratio	mm mm kg	1456 1558 1820 950 1,15:1



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

COOLING SYSTEM		
Radiator Type	50ºC	Tropical
Total Coolant Capacity	L	96
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	ōC	98
Thermostat Operation Temperature - Initial Open	°C	68
Thermostat Operation Temperature - Full Open	ōC	71
Delivery of Coolant Pump	m ³/ h	10,50
Min. Pressure Before Coolant Pump	bar	0,5
Radiator Face Area	m²	1,88
Rows	Row	5
Matrix Density	Per / Inch	18
Material		Aluminum
Width of Matrix	mm	1302
Height of Matrix	mm	1446
Pressure Cap Setting	kPa	70
Estimated Cooling Air Flow Reserve	kPa	0,15
Engine Pre Heater-Tube (with Circulation Pump)	W	3000
LUBRICATION SYSTEM		
Total System	L	57
Minimum Oil Level	L	55
Nominal Motor Operating Temperature	ōC	40
Lubricating Oil Pressure (Rated Speed)	bar	5
Relief Valve Opens	kPa	200
Oil / Fuel Consumption Ratio	%	≤0,5
Normal Oil Temperature	ΩC	110
ELECTRICAL SYSTEM		
Voltage	V	24
Starter	kW	9
Alternator Output Ampers	А	45
Alternator Output Voltage	V	28
Batteries Capacity	Ah	2X135



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### JCB ENERGY DIESEL ENGINE POWER RATINGS

ENGINE MODEL	B1051JCI		ENGINE FAMILY	JC35	ENGINE SERIES	BII	
Speed (Rpm)		TYPICAL GENERATOR OUTPUT (NET)		ENGINE POWEI	R		
	Type of Operation			Gr	OSS	Net	
		kVA	kWe	KWm	Нр	kWm	Нр
1500	Stand By(Maximum)	849,0	679,0	745,0	1.000,0	715,0	959,7
	Prime	770,0	616,0	678,0	910,1	649,0	871,1
1800	Stand By(Maximum)	960,0	768,0	842,0	1.130,2	809,0	1.085,9
	Prime	870,0	696,0	765,0	1.026,8	733,0	983,9

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

50 HZ @ 1500 R/MIN		STAND BY	PRIME
	1.3.47		
Gross Engine Power	kW	745,0	678,0
Net Engine Power	kW	715,0	649,0
Fan Power Consumption (Belt Pulley Driven)	kW	28,0	28,0
Other Power Loss	kW	2,0	1,5
Mean Effective Pressure	MPa	2,49	2,26
Intake Air Flow	m ³ / min	60,38	57,50
Exhaust Temperature Limit	°C	600	600
Exhaust Flow	m ³/ min	147,00	140,00
Boost Pressure Ratio		3,40	3,20
Mean Piston Speed	m / s	7,8	7,8
Cooling Fan Air Flow	m ³/ min	870,0	870,0
Typical Generator Output Power	kVA	849	770
HEAT REJECTION		STAND BY	PRIME
Energy in Fuel (Heat of Combustion)	kW	1863,0	1695,0
Gross Heat to Power	kW	745,0	678,0
Energy to Coolant and Lubricating Oil	kW	317,0	288,0
Heat Dissipation Capacity *	kW	130,0	119,0
Energy to Exhaust	kW	540,0	492,0
	kW kW	540,0 56,0	492,0 51,0



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#### **DIESEL ENGINE MATCHING PARAMETERS - 60 HZ**

CO UZ @ 1900 D /MINI		CTAND DV	PRIME
60 HZ @ 1800 R/MIN		STAND BY	
Gross Engine Power	kW	842,0	765,0
Net Engine Power	kW	806,1	729,7
Fan Power Consumption (Belt Pulley Driven)	kW	33,6	33,6
Other Power Loss	kW	2,3	1,7
Mean Effective Pressure	MPa	2,35	2,13
Intake Air Flow	m ³ / min	68,22	64,90
Exhaust Temperature Limit	°C	650	650
Exhaust Flow	m <sup>3</sup> / min	166,12	158,03
Boost Pressure Ratio		3,80	3,60
Mean Piston Speed	m / s	9,3	9,3
Cooling Fan Air Flow	m ³ / min	983,0	983,0
Typical Generator Output Power	kVA	960	870
HEAT REJECTION		STAND BY	PRIME
Energy in Fuel (Heat of Combustion)	kW	2016,0	1800,0
Gross Heat to Power	kW	842,0	733,0
Energy to Coolant and Lubricating Oil	kW	358,0	325,0
Heat Dissipation Capacity *	kW	147,0	134,0
Energy to Exhaust	kW	610,0	555,0
Heat to Radiation	kW	59,0	53,0
*Intake Intercooled system			

#### JCB ALTERNATOR TECHNICAL PARAMETERS AND SPECIFICATIONS



ALTERNATOR TECHNICAL 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		



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### **ALTERNATOR SPECIFICATIONS**

#### 50 HZ / 231-400V COSQ 0,8 / 1500 RPM STANDARD USING ALTERNATOR **OPTIONAL USING ALTERNATOR** JCB 355L BRAND/MODEL **JCBENERGY**<sup>®</sup> TAL049C HC6G LEROY-SOMER **STAMFORD** DUTY Continuous Stand By AMBIENT C° 40°C 27°C **CLASS / TEMP. RISE** C° H/ 125° K H/ 163° 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** 882,0 kVA 773,0 773,0 802,0 -850,0 850,0 \_ **OUTPUT POWER** kW 618,4 618,4 641,6 680,0 680,0 705,6

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

STANDARD USING ALTERNATOR				OPTIONAL USING ALTERNATOR					
BRAND/MODEL		JCB 355MX	(	LEROY-S		L049B	STAMFO	ORD	HC6G
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	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	770,4	-



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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
- o Battery Charger
- Emergency Stop Button
- Terminal Blocks
   Load Output Terminal
   System Protection MSBs
   Circuit Breaker-Optional
- Control Dolour
- CUILIUI Relays
- 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



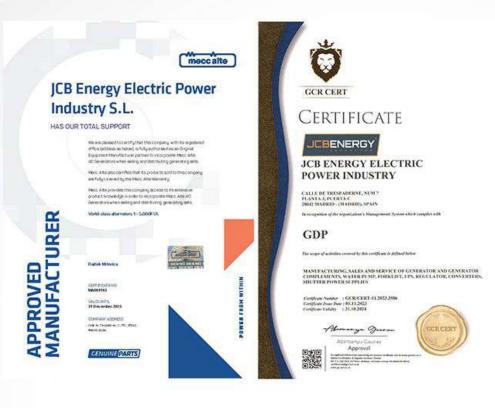
- Special, Registered JCB Energy Design and Colour
- A1 Quality DKP / HRU / Galvanized Steel
- Sensitive Twist on Automatic Press Brake
- Delicate Cut on Automatic Punch and Laser Bench
- Sensitive Welding on Robotic Welding Bench
- Chemical Cleaning Nano Technology Before Painting
- Robotic Painting with Electrostatic Powder Paint
- Drying and stabilizing on 200 °C Ovens
- o 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**

Certificate of I	Registration 🔊	Certificate of Registration 👝		
This is to certify that the Quality I	Management System of	This is to certify that the Environmental Management System of		
JEBENE	RGY	JEBENERGY		
JCB ENERGY ELECTRIC	POWER INDUSTRY	JCB ENERGY ELECTRIC POWER INDUSTRY		
CALLE DE TRESPADERNE, NUN 7 PLANTA 3, PUE	RTA C 28042 MADRID - (MADRID), SPAIN	CALLE DE TRESPADERNE, NUM 7 PLANTA 3, PUERTA C 22042 MADRID - (MADRID), SPAN		
is in accordance with the requireme	nts 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		
MANUFACTURING, SALES AND SERVICE OF GENERATOR AND GENERATOR COMPLEMENTS, WATER FAMP, FORMLET, UPS, REGULATOR, CONVERTERS, SMUTTER POWER SUPPLIES (AF Code: 18,19)		MANUFACTURING, SALES AND SERVICE OF GENERATOR AND GENERATOR COMPLEMENTS, WATER PUMP, FORKLIFT, UPS, REGULATOR, CONVERTERS, SHUTTER POWER SUPPLIES (AF Code: 18,19)		
as www.incenteration.org	Issued by ARS Assessment Private Limited		Issued by APS Assessment Printle United	







JEBENERGY

JCB ENERGY ELECTRIC POWER INDUSTRY

CALLE DE TRESPADERNE, NUM? PLANTA 3, PUERTA C 28642 MADRED - (MADRED, NPAEN

million of the organization's Management System which complex with

1SO 22716:2013:GMP GOOD MANUFACTURING PRACTICES The scope of activities cannot by this confidence is defined below

MANUPACTURING, SALLS AND SERVICE OF GENERATOR AND GENERATOR COMPLEMENTS, WATER FUMP, FORKLIFT, UPS, REGULATOR, CONVERTERS, SIGTTER POWER SUPPLIES

Complexer Needer : GCRCERT-11.2023.3585 Complexer Jour Date (#1.11.2023 Complexer Failed) : 21.38.2024

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Ki gabad Matania anang Ki Kabal Kelang Ki Igaba anang Ali Selaharan Yang Ki Kabalan Ki Kelang Ki Ki Kabalan Ki Kelang Ki Ki Kabalan Ki Kabalan Kabalan GUR CERT



Certificate

HEALTHY & SAFE WORKPLACE CERTIFICATE

JCB ENERGY ELECTRIC POWER INDUSTRY

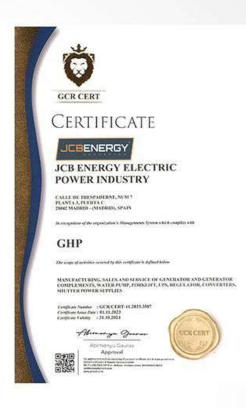
CALLE DE TRESPADERNE, NUM 7 PLANTA L'PUERTA C 20042 MADRID+ (MADRID), SPAIN that been writted to obtain a Healthy and Safe Workplace Certificate by fulfilling the equiversets for COVO-19 resources, when the physical conditions of the business ch is the scope of the Healthy and Safe Workplace Certificate program.

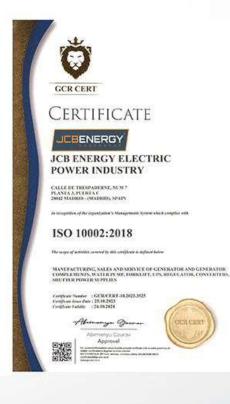
FACTORIES - PRODUCTION LOCATIONS: ELECTRICAL AND ELECTRONICS INDUSTRY

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