

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 EI	NGINE		ALTERN	ATOR		TYPE OF	GENER	ATOR O	UTPUT			
Model	Hz	V	Cos Q	Rpm	Brand	Model	Series	Brand	Model	Series	Operation	kVA	kW	А			
								Ë			Standby	275,0	220,0	397,4			
JCD 275	50	231/400	0.8	1500	Å			H		270L1	Prime	250,0	200,0	361,3			
					DEUTZ TCD8.	DEUTZ	DEUTZ	DEUTŽ	TCD0 0	TCD	EVERO	JCB		Continuous	224,7	179,8	324,7
									DEUTZ	1008.0	TCD	ig.	JCB		Standby	300,0	240,0
JCD 300	60	277/480	0.8	1800				ij		270MX	Prime	272,7	218,2	394,1			
								-			Continuous	243,1	194,5	351,3			

- 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.

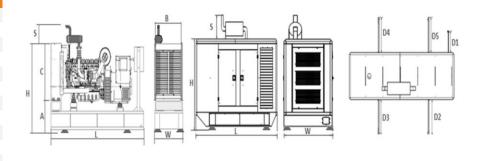
GENERATOR DIMENSIONS AND TECHNICAL DRAWINGS





VALUES		OPEN TYPE GENERATOR	CANOPY TYPE GENERATOR
WIDTH	mm	1100	1179
LENGTH	mm	3095	3921
HEIGHT	mm	1782	2498
WEIGHT (NET)	Kg	2159	2600
FUEL TANK CAPACITY	L	475	673

SYMBOL	OPEN	CANOPY
L	3095	3921
W	1100	1179
Н	1598	1955
S	184	543
Α	766	
В	810	
С	860	
D1		520
D2		850
D3		850
D4		850
D5		850



FUEL CONSUMPTION

PERCENT OF PRIME POWER	1500 rpm	1800 rpm
TERCENT OF TRANSLET OWER	l/hr	l/hr
110 %	56,69	61,22
100 %	51,02	55,66
75 %	39,44	43,03
50 %	27,73	30,25



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DIESEL ENGINE MAIN TECHNICAL PARAMETERS

F0 Hz _ 1500 min-1		<u></u>	60 Hz _ 1800 min-1		
50 Hz – 1500 min ⁻¹ Type		TCD8.0	60 Hz – 1800 min ⁻¹ Type		TCD8.0
Speed	min ⁻¹	1500	Speed	min ⁻¹	1800
Net Frequency	Hz	50	Net Frequency	Hz	60
Power Standard		LTP	Power Standard		LTP
Power Level		-	Power Level		-
Exhaust Emission Standard		Fuel Optimized	Exhaust Emission Standard		Fuel Optimized
GENERAL			GENERAL		
Aspiration		Turbo,CAC	Aspiration		Turbo,CAC
Governing System		Electronic	Governing System		Electronic
Governor Brand		Bosch	Governor Brand		Bosch
No of Cylinders		6	No of Cylinders		6
Configuration		in-line	Configuration		in-line
Injection System		Common Rail	Injection System		Common Rail
Displacement	L	7,8	Displacement	L	7,8
Bore	mm	110	Bore	mm	110
Stroke	mm	136	Stroke	mm	136
Compression Ratio		17:1	Compression Ratio		17:1
Mean Effective Pressure	Bar	28	Mean Effective Pressure	Bar	24
Piston Speed	m/s	6,5	Piston Speed	m/s	7,8
Rotation (looking at flywheel)	111/3	ŕ	Rotation (looking at flywheel)	111/3	•
		ccw			ccw
No of Teeth on Flywheel Ring Gear GOVERNOR PERFORMANCE		129	No of Teeth on Flywheel Ring Gear GOVERNOR PERFORMANCE		129
Speed droop (static) mech. gov.	%		Speed droop (static) mech. gov.	%	
Speed droop (static) electr. gov.	%	0	Speed droop (static) electr. gov.	%	0
Governing standards	70	G3	Governing standards	70	
MOMENT OF INERTIA		43	MOMENT OF INERTIA		G3
Engine without flywheel	kg m²	0,57	Engine without flywheel	kg m²	0,57
Flywheel (standard genset spec.)	kg m²	2,60	Flywheel (standard genset spec.)	kg m²	2,60
Max. step load acceptance, 1st step	%	-	Max. step load acceptance, 1st step	%	-
Sound power at full load, incl. cooling system	dB(A)	112,1	Sound power at full load, incl. cooling system	dB(A)	117,1
Sound press. (1m average, full load), incl. cool. syst.	dB(A)	97,6	Sound press. (1m average, full load), incl. cool. syst.	dB(A)	102,6
ENGINE WEIGHT			ENGINE WEIGHT		
Engine Dry, w/o Cooling System	kg	764	Engine Dry, w/o Cooling System	Kg	764
Engine with cooling system	kg	954	Engine with cooling system	kg	954
LUBRICATION SYSTEM			YAĞLAMA SİSTEMİ		
Oil specification		15W40/CI-4/SL	Oil specification		15W40/CI-4/SL
Oil consumption (as % of fuel consumption)	%	0,02	Oil consumption (as % of fuel consumption)	%	0,02
Oil capacity (sump)	1	31	Oil capacity (sump)	1	31
Min. oil pressure (warning)	Bar	1,5	Min. oil pressure (warning)	Bar	1,5
Min. oil pressure (shut down)	Bar	1,35	Min. oil pressure (shut down)	Bar	1,35
Max. permissible oil temperature (oil pan)	°C	130	Max. permissible oil temperature (oil pan)	°C	130
OUTPUT			OUTPUT		
Gross Output(LTP or StandBy Power)	Kw	250	Gross Output(LTP or StandBy Power)	Kw	270
Fan Reduction	Kw	11,6	Fan Reduction	Kw	20
Net flywheel	Kw	238,4	Net flywheel	I/v-=	243
Electrical Output (Stand By)	Kva	275	Electrical Output (Stand By)	Kva	300
Gross Output(PRP or Prime Power) Gross Output(Continous Power)	Kw kw	225 207	Gross Output(PRP or Prime Power) Gross Output(Continous Power)	Kw kw	245 223
Gross Garparicontinious Fower)	IVVV	207	Gross Output(Continious Fower)	I. VV	223



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DIESEL ENGINE MAIN TECHNICAL PARAMETERS

50 Hz – 1500 min ⁻¹			60 Hz – 1800 min ⁻¹		
COOLING SYSTEM, GENERAL ENGINE COOLING DATA	λ		COOLING SYSTEM, GENERAL ENGINE COOLING DATA	4	
Max. perm. Coolant Outlet Temperature	°C	103	Max. perm. Coolant Outlet Temperature	°C	103
Max. perm. Flow Resistance (cool. syst. and piping)	Bar	0,33	Max. perm. Flow Resistance (cool. syst. and piping)	Bar	0,45
Max. Temperature of Coolant (warning)	°C	108	Max. Temperature of Coolant (warning)	°C	108
Max. Temperature of Coolant (shutdown)	°C	110	Max. Temperature of Coolant (shutdown)	°C	110
Temperature at Which Thermostat Starts to open	°C	83	Temperature at Which Thermostat Starts to open	°C	83
Temperature at Which Thermostat is Fully Open	°C	98	Temperature at Which Thermostat is Fully Open	°C	98
Delivery of Coolant Pump	m³/h	14,7	Delivery of Coolant Pump	m³/h	17,7
Min. Pressure Before Coolant Pump	Bar	0,3	Min. Pressure Before Coolant Pump	Bar	0,3
Temperature at CAC outlet at standard conditions	°C	40	Temperature at CAC outlet at standard conditions	°C	40
ENGINE COOLING SYSTEM Coolant Capacity (engine)	ı	9,8	ENGINE COOLING SYSTEM Coolant Capacity (engine)	ı	9,8
Coolant Capacity (incl. cooling unit)	1	27	Coolant Capacity (incl. cooling unit)	ı İ	27
Air to Boil (max. permissible cool. air temp. at fan)	°C	54	Air to Boil (max. permissible cool. air temp. at fan)	°C	60
Fan Power Consumption	kW	11,6	Fan Power Consumption	kW	20
Cooling air Flow	m³/h	16200	Cooling air Flow	m³/h	21240
Air Pressure Loss, external	mbar	1,5	Air Pressure Loss, external	mbar	2
HEAT BALANCE			HEAT BALANCE		
Heat Dissipation (engine radiator)	kW	122,3	Heat Dissipation (engine radiator)	kW	130,2
Heat Dissipation (CAC)	kW	48	Heat Dissipation (CAC)	kW	56,6
Heat Dissipation (convection)	kW	25	Heat Dissipation (convection)	kW	26
INLET / EXHAUST DATA			INLET / EXHAUST DATA		
Max. intake Depression (Switch setting)	mbar	30	Max. intake Depression (Switch setting)	mbar	30
Combustion Air Volume	m³/h	909	Combustion Air Volume	m³/h	1027
Max. Exhaust Back Pressure	mbar	50	Max. Exhaust Back Pressure	mbar	50
Max. Exhaust Gas Temperature	°C	530	Max. Exhaust Gas Temperature	°C	490
Exhaust Gas Flow (at above temp)	m³/h	2547	Exhaust Gas Flow (at above temp)	m³/h	2743
Exhaust Flange / pipe diameter	mm	-	Exhaust Flange / pipe diameter	mm	-
ELECTRICAL SYSTEM			ELECTRICAL SYSTEM		
Voltage	V	24	Voltage	٧	24
Starter	KW	5	Starter	KW	5
Alternator Output	Α	80	Alternator Output	Α	80
Batteries (minimum capacity, cold start limit -5°C)	Ah	2*85	Batteries (minimum capacity, cold start limit -5°C)	Ah	2*85



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ALTERNATOR TECHNICAL PARAMETERS



ALTERNATOR TECHNIC	ALFANAIVILILIS								
Insulation Class			Н	Field Control S	ystem			Se	elf-Excited
Winding Pitch			2/3 - (N° 6)	A.V.R. Model			Standard		AS440
Wires			12	Voltage Regula	ation		%		± 1
Protection			IP 23	Sustained Sho	rt-Circuit Cu	rrent	10 sec	30	00% (3 IN)
Altitude	m		1000	Total Harmoni	c (*) TGH / T	нс	%		< 4
Overspeed	rpm		2250	Wave Form: N	EMA = TIF -	(*)			< 50
Air Flow	m³/sec.		0.514	Wave Form: I	E.C. = THF -	(*)	%		< 2
Bearing Drive	N/A		-	Bearing Non-D	rive		Bearing		6310-2RZ
Rotor Winding	100%		Copper	Stator Winding	g		100%		Copper
50 HZ / 231-400V COSQ 0,8 / 1500 RPM STANDARD USING ALTERNATOR OPTIONAL USING ALTERNATOR									
STANDARD USING ALTE				OPTIONAL U	SING ALTERN	IATOR			
STANDARD USING ALTE	ERNATOR	100.07014		100 000000000	TM			1162741/	
BRAND/MODEL		JCB 270L1		LEROY-SO	TM	IATOR TAL046D	STAMFORD	UC274K	
BRAND/MODEL DUTY	ERNATOR - JCBENERGY	JCB 270L1		LEROY-50 Continuous	TM			itand By	
BRAND/MODEL	ERNATOR	JCB 270L1		LEROY-SO	TM				
BRAND/MODEL DUTY	ERNATOR - JCBENERGY	JCB 270L1		LEROY-50 Continuous	TM		S	itand By	
BRAND/MODEL DUTY AMBIENT	ERNATOR JEBENERGY C°	JCB 270L1 380/220	400/231	LEROY-SC Continuous 40°C	TM		S	Stand By 27°C	1 Phase
BRAND/MODEL DUTY AMBIENT CLASS / TEMP. RISE	C° C°		400/231 200/115	LEROY-50 Continuous 40°C H/ 125° K	OMER [™]	TAL046D	S	Stand By 27°C 1/ 163° K	
BRAND/MODEL DUTY AMBIENT CLASS / TEMP. RISE SERIES STAR	C° C° V	380/220		LEROY-50 Continuous 40°C H/ 125° K 415/240	DMER [™] 1 Phase	TAL046D 380/220	S H 400/231	itand By 27°C I/ 163° K 415/240	1 Phase
BRAND/MODEL DUTY AMBIENT CLASS / TEMP. RISE SERIES STAR PARALLEL STAR	C° C° V	380/220 190/110	200/115	LEROY-50 Continuous 40°C H/ 125° K 415/240 208/120	1 Phase	380/220 190/110	\$ 400/231 200/115	itand By 27°C 8/ 163° K 415/240 208/120	1 Phase 220

60 HZ / 277-480V COSQ 0,8 / 1800 RPM									
STANDARD USING ALTERNATOR OPTIONAL USING ALTERNATOR									
BRAND/MODEL	JCBENERGY	JCB 270MX		LEROY-SOM	ER [*]	TAL046C	STAMF	ORD UC27	4 J
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	269,0	284,0	298,0	-	296,0	312,0	328,0	-
OUTPUT POWER	kW	215,2	227,2	238,4	-	236,8	249,6	262,4	-



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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

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



Low Water Temperature



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

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

CONTROL MODULE TECHNICAL PARAMETERS

Brand	JCBĖNĖKĖ ,	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
- o 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
- 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

