FDK ENERGY

SHENZHEN FUDIANKANG ENERGY CO., LTD
GUANGZHOU SANQ DIESEL GENERATOR SET CO., LTD
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DATA SHEET

DIESEL GENERATOR 240KW
MODEL#FDK-CC240EN/H2
650HZ/1800RPM
CUMMINS MODEL: MTA11-G2A

General Features:

- All qualified generator sets are subjected to a comprehensive performance test which includes 50% load, 70% load, 100% load, 110% load and to check, verify that all control systems, alarm and shut-down protection.
- Equipped with battery charger and 24V high performance maintenance-free lead-acid starting batteries and connecting cables.
- Stainless galvanized zinc plates with strong corrosion-proof.
- Vibration isolators between the engine/alternator and base frame.
- Equipped with industrial silencer and flexible exhaust hose.
- Designed to comply with ISO8528/GB2820.
- Powered by Cummins engine and coupled with Stamford alternator.
- Water jacket preheater, oil heater and double air cleaner, etc. are available.

FDK Diesel Generator Set Data

Genset Model	FDK-CC240EN/H2	Engine Make	Cummins
Prime Power	215KW/270KVA	Engine Model	MTA11-G2A
Standby Power	240KW/300KVA	Alternator model	Stamford UCDI274J
Output Frequency / Rated speed	60Hz/1800rpm	Control System	DSE7320
Rated Voltage	230V/400V	Phase	Three

(1) **Prime power**: The rating is available for an unlimited of annual operating hours in variable load applications, in accordance with ISO8528-1.A 10% overload is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO 3046-1.

(2) **Standby power**: The rating is applicable for supplying emergency power in variable load applications for up to 200 hours per year in accordance with ISO8528-1. Overload is not allowed.

(3) **Rated voltage**: available with customer requirement.

Engine Specifications (DETAILED in APPENDIX)

Engine Model	MTA11-G2A	Aspiration	Turbo-charged
Engine Manufacturer	Cummins (CCEC CHINA)	Bore x Stroke (mm x mm)	125×147
		Displacement	10.8L
Cylinder quantity	6	Compression Ratio	16.0:1
Cylinder Arrangement	In-line	Prime power / Speed (KW/RPM)	254/1800
Cycle	4	Standby power/ Speed (KW/RPM)	280/1800

CE ISO9001:2008

Type Injection System	Direct injection Cummins PT	Fuel Consumption at 100% load (L/HOUR)	64 at 1800rpm
Piston Speed	9.2 m/s	Starter motor	24V
Friction Energy Output	32kw	Low idle	675-750rpm
Total Lubrication System Capacity (L)	39	Coolant Capacity (L)	12.9L

Alternator Specifications

Alternator model	UCDI274J	Number of phase	3
Alternator manufacturer	STAMFORD	Rated voltage	440V (Available with custom requirements)
Exciter type	Single bearing, Brushless, Self-excited	Power factor	0.8
Rated output prime power	281KVA	Voltage regulation NL-FL	≤±1%
Rated speed	1800 rpm	Insulation grade	H
Rated frequency	60Hz	Protection grade	IP23

Alternator option: Leroy Somer, MECC, Marathon, Engga, Faraday

Control System DSE7320 (DETAILED in INSTRUCTION)

DSE7320 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, breaker control and automatically start the engine when the mains are abnormal. Accurately measure various operational parameters and display all values and alarms information on the LCD. In addition, the control module can automatically shut down the engine and indicate the engine failure.

FEATURES

- Microprocessor control, with high stability and credibility.
- Monitoring and measuring operational parameters of the mains supply and genset.
- Indicating operation status, fault conditions, all parameters and alarms.
- Multiple protections; multiple parameters display, like pressure, temp. etc.
- Manual, automatic and remote work mode selectable.
- Real time clock for time and date display, overall runtime display, 250 log entries.
- Overall power output display.
- Integral speed/frequency detecting, telling status of start, rated operation, overspeed etc.
- Communication with PC via RS485 OR RS232 interface, using MODBUS protocol.

Soundproof Enclosure Specification

FDK silent generator is designed by professional acoustic engineers based on years of experience. Now we can make the noise of the generator less than 80-85dB(A) at 1m, or 70-75dB(A) at 7m, 60-65dB(A) at 15m.

FEATURES

- Multi-way air intake and exhaust guarantee the power performance of the generator.
- Large-scale impedance combined type silencer effectively reduce noise of the generator.
- Internal high performance rubber damper and flexible materials reduce vibration.
- Base mounted fuel tank supports the generator running for 8 hours.

Optional

Generator set	Alternator	Low environment Temp	ATS
☐ Open generator set	☐ Stamford	☐ Water heater	☐ CHINT
☐ Silent generator set	☐ Marathon	☐ Oil heater	☐ SCHNEIDER
☐ Trailer generator set	☐ Mecc Alte	☐ Battery heater	☐ ABB
☐ ABB MCCB circuit breaker	☐ Leroy Somer		
	☐ Farady		
	☐ Engga		
Fuel system	**Control system**	**Voltage**	**Synchronized system**
☐ 12hrs base tank	☐ AMF function	☐ 415/240V	☐ CHINT Cabinet
☐ 24hrs base tank	☐ ATS control cabinet	☐ 400/230V	☐ SCHNEIDER Cabinet
☐ Dual wall base fuel tank	☐ DSE7320	☐ 380/220V	☐ DSE8610 Module
☐ Outside fuel tank	☐ DSE7510	☐ 220/127V	☐ COMAQ Module
	☐ GU620A	☐ 200/115V	☐ DEIF Module

Dimension & Weight

Open

Overall Size: L×W×H (mm)	2650×960×1632
Weight (kg)	2000

Soundproof Version

Overall Size: L×W×H (mm)	3600×1330×2065
Weight (kg)	2500

Sales Promises

- FDK provides a full line of brand new and high quality products. Each and every unit is strictly factory tested before shipment.
- Quality warranty is according to our standard conditions: 12 months from BL date or 1000 running hours, whichever comes first.
- Service and parts are available from FDK or distributors in your location.
- FDK guarantee use **BRAND NEW & GENUINE MACHINE.**

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General Engine Data

Type ..... 6 Cylinder, In-line, 4 Cycle
Aspiration ..... Turbocharged and Jacket Water Aftercooled
Bore×Stroke –mm(in)×mm(in) ..... 125(4.92)×147(5.79)
Displacement –L(in^3) ..... 10.8(661)
Firing Order 1-5-3-6-2-4
Compression Ratio ..... 16.1：1
Dry Weight (Including Flywheel and Generator,
Excluding other Electrical Component) -kg 940
Wet Weight -(kg) 980
Center of Gravity from Front Face of Block -mm 450
Center of Gravity above Crankshaft Centerline -mm 191
Moment of Inertia of Rotation Components (Excluding Flywheel) -kg·m^2 ..... 0.85
Installation Drawing 3170249

Engine Mounting

Maximum of Bending Moment @ RFOB -N.m 1356
Moment of Inertia of Complete Engine (with FW2141) -kg·m2 ..... 2.63

Performance Data

All data is based on：
The engine operating with fuel system, water pump, lubricating oil pump and air cleaner; not included alternator, compressor, fan, optional equipment and driven components.
The engine operating with No.0 diesel fuel which meets GB/T 252.
Standard Test Conditions (Refer to Part 1 of ISO 3046)：

—Barometric pressure ： 100kPa
—Inlet air temperature： 25℃
—Altitude： 110m
—Relative Humidity： 30 %

Data represents gross engine performance capabilities obtained and corrected in accordance with SAE J1995.
Idle Speed -r/min.....675–750
Minimum Engine Speed -r/min.....500
Closed Throttle Torque at Minimum Engine Speed -N.m.....340
Maximum Governed Speed -r/min 1725
Maximum Allowable Altitude –m 1525
Crankshaft Thrust Bearing load Limit：
—Maximum Intermittent -(N).....9000
—Maximum Continuous -(N) 4000
Steady State Stability Band at any Constant Load -% ..... ±0.25
Maximum Over Speed Capability r/min 1725

Performance Data（50HZ）	STANDBY	PRIME
Engine Speed -r/min	1500	1500
Power Output –kW	257	234
Maximum Friction Power -kW	22.4	22.4

CE ISO9001:2008

Engine Coolant Flow -L/s	3.8	3.8
Engine Data with Dry Type Exhaust Manifold		
Intake Air Flow -L/s	280	263
Exhaust Gas Temperature (Before Turbo) -℃	518	510
Exhaust Gas Temperature (After Turbo) -℃	410	405
Exhaust Gas Flow -L/s	707	510
Radiated Heat to Ambient –kW	34	31
Heat Rejection to Coolant –kW	114	106
Heat Rejection to Exhaust –kW	170	159
Air to Fuel Ratio	24:1	25:1

* Values are within ±5%.

Coolant flow and heat rejection data are based on a coolant mixture of 50% water and 50% ethylene glycol.

Exhaust System

Maximum Back Pressure –kPa 10.0

Exhaust Pipe Size Normally Acceptable –mm 102

Maximum Bending Moment to the Turbo Flange -N.m 27

Air Intake System

Maximum Temperature Rise Between Ambient Air and Engine Air Inlet -℃ 16

Maximum Allowable Intake Air Restriction With Heavy Duty Air Cleaner -kPa

—Clean Element 2.5

—Dirty Element 6.2

Minimum Allowable Dirt Holding Capacity With Heavy Duty Air Cleaner -g/l/s 6.3

Cooling System

Coolant Capacity，Engine Only –L 12.9

Standard Thermostat (modulating) Range -℃ 82–93

Maximum Coolant Friction Head External to Engine –kPa 34.5

Minimum Water Pump Inlet Pressure (Thermostat Full open and No Pressure Cap) –kPa 8.5

Maximum Block Coolant Pressure with Closed Thermostat and no Pressure Cap –kPa 276

Maximum Pressure Cap –kPa 50

Maximum Engine Coolant temperature at Engine Outlet -℃

—Standby 104

—Prime 100

Minimum Engine Coolant temperature -℃ 70

Minimum Allowable Fill Rate -L/min 19

Maximum Initial Fill Time –min. 5

Minimum Coolant Expansion Space of System Capacity -%..... 5

Maximum Allowable Deaeration Time –min. 25

Minimum Allowable Drawdown –L 7.1

Maximum Coolant Flow to Accessory -L/min. 75

Minimum Coolant Capacity, Not Including Expansion Space –L 9.5

LUBRICATION SYSTEM

Oil Pan Capacity (OP2060):

—High –L 34

—Low –L 26

Total System Capacity with LF9009 Combine filter -L 39

Angularity of Standard Oil Pan: OP 2060-Degrees: -Degree

—Front Down 42

—Rear Down 45

—Fuel Pump Side Down 40

—Exhaust Side Down 45

Normal Operate Oil Pressure Range –kPa 207-276

Maximum Allowable Sump Oil Temperature -℃ 121

Minimum Engine Oil Pressure for Engine Protection Devices -kPa:

—At Rated Speed and Load –kPa 193

—At Low Idle –kPa 69

Maximum Oil Consumption -g/kW.h 0.24

FUEL SYSTEM

Maximum allowable Restriction to PT Fuel Pump -kPa:

—With Clean Fuel Filter 13.6

—With Dirty Fuel Filter 27.1

Maximum Allowable Injector Return Line Restriction -kPa

—With Check Valves 22

—Less Check Valves 8.4

Minimum Allowable Fuel Tank Vent Capability -L/hr 850

Maximum fuel Inlet Temperature -℃ 71

ELECTRICAL SYSTEM

Battery Capacity (24V)

Minimum Battery Capacity -Cold Soak at -18℃ or Above :

—Above 10℃ 600

—0℃～10℃ 640

—Less Than 0℃ 900

Maximum Allowable Resistance of Starting Circuit With 24 volt Starter）-Ω..... 0.002

Maximum Starting Circuit Volt Drop @100 Amperes-Volt 0.2

CRANKING SYSTEM

Minimum Cranking Speed Required for Unaided Cold Start -r/min 150