GDZ SERIES

We are Exclusive Distributor of DEUTZ

GENPOWER GENERATOR

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

GDZ 85 & 96

Genset General Information														
Generator	Frequency	Voltage	Power Factor	Speed	Diesel Engine			Alternator			Type of	Generator Output		
Model	Hz	V	CosQ	rpm	Brand	Model	Serial	Brand	Model	Serial	Operation	kVA	kW	A
GDZ 85	50	231/400	0,8	1500	DEUTZ	BF4M2012C G1	BF	GENPOWER	GNP	225 M1	Stand By Prime Continuous	85,0 77,3 54,1	68,0 61,8 43,3	122,8 111,7 78,2
GDZ 96	60	277/480	0,8	1800						225 M1	Stand By Prime Continuous	95,6 86,9 60,9	76,5 69,5 48,7	138,2 125,6 87,9

Features and Benefits

- We are exclusive Distributor of DEUTZ Engine
- Half Century Experience in Generator Manufacturing
- Diesel Engines with Advanced Technology and Quality
- Alternators with Advanced Technology and Quality
- Control Panel Suitable for Flexible Application
- High Quality and Reliable Technology
- Patented Compact Designed and Soundproof Canopy
- Original DEUTZ AG Products
- Low Noise Level
- Low Exhaust Emission
- Low Operating Cost
- Low Fuel Consumption
- Low Oil Consumption
- Tropical 50°C Radiator
- Global DEUTZ AG Warranty
- Suitable for Heavy-Duty
- Durability
- Wide Range of Affordable Spare Parts
- Fuel Filter with Water and Particle Separator
- First Class Product Support
- Global Technical Service and Maintenance Support

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

General Characteristics

50Hz - 1500-min -1

Engine

Type		BF4M2012C
Speed	min^{-1}	1500
Net frequency	Hz	50
Power standard		LTP
Power level		G1
Exhaust emission standard		COM II

General

Aspiration		Turbo, CAC
Governing System		Electronic
Governor Brand		Heinzmann / DDE
No of cylinders		4
Configuration		in-line
Injection system		single injection pumps
Displacement	l	4,04
Bore	mm	101
Stroke	mm	126
Compression ratio		19:1
Mean effective pressure	bar	14,80
Piston speed	m/s	6,30
Rotation (looking at flywheel)		ccw
No of teeth on flywheel ring gear		129

Governor performance

Speed droop (static) mech. gov.	%	4-5
Speed droop (static) electr. gov.(EMR/DDE)	%	0 - 3
Governing standards to ISO 8528 Parts 1 and 5		G2

Moment of inertia

Engine without flywheel	kg m^2	0.16
Flywheel (standard genset spec.)	kg m^2	1,20
Max. step load acceptance, 1st step	%	-
Sound power at full load,incl. cooling system	dB(A)	108.1
Sound press.(1m average,full load), incl.cool.syst.	dB(A)	94.5

Engine Weight

Engine dry, w/o cooling system	kg	405
Engine with cooling system	kg	473

Lubrication system

Oil specification		15W40/CI-4/SL
Oil consumption (as % of fuel consumption)		0.15
Oil capacity (sump)	l	8,50
Min. oil pressure (warning)	bar	1,80
Min. oil pressure (shut down)	bar	1,50
Max. permissible oil temperature(oil pan)	°C	125

Output

Gross output(LTP or StandBy Power)	kW	74.9
Fan reduction	kW	4,90
Net flywheel	kW	70.0
Electrical output (Stand By)	kVA	85
Gross output(PRP or Prime Power)	kW	71
Gross output(Continous Power)	kW	64

60Hz - 1800-min -1

Engine

Type		BF4M2012C
Speed	min^{-1}	1800
Net frequency	Hz	60
Power standard		LTP
Power level		G1
Exhaust emission standard		COM II

General

Aspiration		Turbo, CAC
Governing System		Electronic
Governor Brand		Heinzmann / DDE
No of cylinders		4
Configuration		in-line
Injection system		single injection pumps
Displacement	l	4,04
Bore	mm	101
Stroke	mm	126
Compression ratio		19:1
Mean effective pressure	bar	14,50
Piston speed	m/s	7,56
Rotation (looking at flywheel)		ccw
No of teeth on flywheel ring gear		129

Governor performance

Speed droop (static) mech. gov.	%	4-5
Speed droop (static) electr. gov.(EMR/DDE)	%	0 - 3
Governing standards to ISO 8528 Parts 1 and 5		G2

Moment of inertia

Engine without flywheel	kg m^2	0.16
Flywheel (standard genset spec.)	kg m^2	1,20
Max. step load acceptance, 1st step	%	-
Sound power at full load,incl. cooling system	dB(A)	109
Sound press.(1m average,full load), incl.cool.syst.	dB(A)	95.5

Engine Weight

Engine dry, w/o cooling system	kg	405
Engine with cooling system	kg	473

Lubrication system

Oil specification		15W40/CI-4/SL
Oil consumption (as % of fuel consumption)		0.15
Oil capacity (sump)	l	8,50
Min. oil pressure (warning)	bar	1,80
Min. oil pressure (shut down)	bar	1,50
Max. permissible oil temperature(oil pan)	°C	125

Output

Gross output(LTP or StandBy Power)	kW	88
Fan reduction	kW	8,30
Net flywheel	kW	79.7
Electrical output (Stand By)	kVA	96
Gross output(PRP or Prime Power)	kW	79
Gross output(Continous Power)	kW	75

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50Hz - 1500-min -1

Fuel System, Fuel consumption

25% load	l/h	5,00
50% load	l/h	8,90
75% load	l/h	13,30
100% load	l/h	18,10
25% load	g/kWh	240
50% load	g/kWh	214
75% load	g/kWh	213
100% load	g/kWh	217
Max. suction head of fuel feed pump	m	-

Cooling System, General engine cooling data

Max.perm.coolant outlet temperature	°C	105
Max. perm. flow resistance (cool. syst. and piping)	bar	0.22
Max.temperature of coolant (warning)	°C	108
Max. temperature of coolant (shutdown)	°C	110
Temperature at which thermostat starts to open	°C	83
Temperature at which thermostat is fully open	°C	98
Delivery of coolant pump	m3/h	7,20
Min. pressure before coolant pump	bar	0.3
Temperature at CAC outlet at standard conditions	°C	40

Engine Cooling System

Coolant capacity (engine)	l	6,00
Coolant capacity (incl. cooling unit)	l	15,90
Air to boil (max. permissible cool. air temp. at fan)	°C	55
Fan power consumption	kW	4,90
Cooling air flow	m3/h	5400
Air pressure loss, external	mbar	1,50

Heat Balance

Heat dissipation (engine radiator)	kW	43,10
Heat dissipation (CAC)	kW	7,50
Heat dissipation (convection)	kW	7,50

Inlet / Exhaust Data

Max. intake depression (Switch setting)	mbar	25
Combustion air volume	m3/h	267.4
Max. exhaust back pressure	mbar	30
Max. exhaust gas temperature	°C	600
Exhaust gas flow (at above temp)	m3/h	829
Exhaust flange / pipe diameter	mm	-

Electrical System

Voltage	V	12
Starter	Kw	6
Alternator output	A	35
Batteries	Ah	1*85

60Hz - 1800-min -1

Fuel System, Fuel consumption

25% load	l/h	5,80
50% load	l/h	10,10
75% load	l/h	14,80
100% load	l/h	20,00
25% load	g/kWh	248
50% load	g/kWh	218
75% load	g/kWh	213
100% load	g/kWh	215
Max. suction head of fuel feed pump	m	-

Cooling System, General engine cooling data

Max.perm.coolant outlet temperature	°C	105
Max. perm. flow resistance (cool. syst. and piping)	bar	0.22
Max.temperature of coolant (warning)	°C	108
Max. temperature of coolant (shutdown)	°C	110
Temperature at which thermostat starts to open	°C	83
Temperature at which thermostat is fully open	°C	98
Delivery of coolant pump	m3/h	8,60
Min. pressure before coolant pump	bar	0.3
Temperature at CAC outlet at standard conditions	°C	40

Engine Cooling System

Coolant capacity (engine)	l	6.0
Coolant capacity (incl. cooling unit)	l	15,90
Air to boil (max. permissible cool. air temp. at fan)	°C	60
Fan power consumption	kW	8,30
Cooling air flow	m3/h	6500
Air pressure loss, external	mbar	2.0

Heat Balance

Heat dissipation (engine radiator)	kW	42,30
Heat dissipation (CAC)	kW	13,00
Heat dissipation (convection)	kW	9,00

Inlet / Exhaust Data

Max. intake depression (Switch setting)	mbar	25
Combustion air volume	m3/h	335.0
Max. exhaust back pressure	mbar	30
Max. exhaust gas temperature	°C	540
Exhaust gas flow (at above temp)	m3/h	1071
Exhaust flange / pipe diameter	mm	-

Electrical System

Voltage	V	12
Starter	Kw	6
Alternator output	A	35
Batteries	Ah	1*85

Alternator Technical Parameters

Insulation Class		H	Field Control System		Self Excited
Winding Pitch		2/3 - (N° 6)	A.V.R. Model	Standard	SX460
Wires		12	Voltage Regulation	%	± 1
Protection		IP 23	Sustained Short-Circuit Current	10 sec	300% (3 IN)
Altitude	m	1000	Total Harmonic (*) TGH / THC	%	< 5
Overspeed	rpm	2250	Wave Form :NEMA = TIF - (*)		< 50
Air Flow	m^3/sec	0.216	Wave Form :I.E.C. = THF - (*)	%	< 2
Bearing Drive	N/A	-	Bearing Non - Drive	Bearing	6309-2RZ
Rotor Winding	100%	Copper	Stator Winding	100%	Copper

(*) Total harmonic content line to line, at no load or full rated linear and balanced load

Genpower sychron alternators are produced according to TSE 60034-1; IEC 60034-22; GB755; BS4999-5000; NEMA MG 1.22 standards

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Alternator Specifications

50 Hz - 231/400V - Cos Q 0,8 - 1500 rpm — 50Hz

Standard Using Alternator				Optional Using Alternator					
Brand/Model	Genpower	GNP 225 M1		Leroy Somer	TAL044B		Stamford	UC224G	
Duty		Continuous				Stand By			
Ambient	C°	40°C				27°C			
Class/Temp. Rise	C°	H / 125° K				H / 163° K			
Series Star (V)	V	380/220	400/231	415/240	1 Phase	380/220	400/231	415/240	1 Phase
Parallel Star (V)	V	190/110	200/115	208/120	220	190/110	200/115	208/120	220
Series Delta (V)	V	220	230	240	230	220	230	240	230
Output Power	kVA	77,0	77,0	80,0	-	85,0	85,0	88,0	-
Output Power	kW	61,6	61,6	64,0	-	68,0	68,0	70,4	-

60 Hz - 277/480V - Cos Q 0,8 - 1800 rpm — 60Hz

Standard Using Alternator				Optional Using Alternator					
Brand/Model	Genpower	GNP 225 M1		Leroy Somer	TAL044A		Stamford	UC224F	
Duty		Continuous				Stand By			
Ambient	C°	40°C				27°C			
Class/Temp. Rise	C°	H / 125° K				H / 163° K			
Series Star (V)	V	416/240	440/254	480/277	1 Phase	416/240	440/254	480/277	1 Phase
Parallel Star (V)	V	208/120	220/127	240/138	-	208/120	220/127	240/138	-
Series Delta (V)	V	240	254	277	240	240	254	277	240
Output Power	kVA	83,0	87,0	92,0	-	91,0	96,0	101,0	-
Output Power	kW	66,4	69,6	73,6	-	72,8	76,8	80,8	-

Other Details

Diesel Engine and Genset Rating Classifications

The below ratings represent the engine performance capabilities to conditions specified in TS ISO 8528/1, 8528-4, 8528-5, 8528-8, BS5000, ISO 3046/1:1986, NEMA MG-1.22.1, BS 5514/1.

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 nonvariable 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 exceeding 750 hours per year at the Prime Power rating should use the Continuous Power rating.

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.

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.

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Control Panel Specifications

Powder Painted Steel Pannel with Lockable Door	Battery Charger	Control Relays	System Protection MCBs
ATS (Automatic Transfer Panel) - Optional	Emergency Stop Button	Terminal Blocks	Circuit Breaker - Optional
Control Module	Backlit, 128x64 Pixels	Load Output Terminal	LCD Screen

Control Module Technical Parameters

Brand	GENPOWER/FORTRUST	Model	6120-D Version
Dimensions	120mm x 94mm	Protection Class	IP65 From the Front
Weight	260 gr.	Environmental Conditions	2000 Meters Above Sea Level
Ambient Humidity	90% max.	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 Functions

Mains Voltage Level Control	Generator Voltage Level Control	3 phase Generator Protections	3 phase AMF Function
Network Frequency Level Control	Generator Frequency Level Control	- High / Low Voltage	- High / Low Frequency
Engine Operating Option Control	Generator Current Level Control	- High / Low Frequency	- High / Low Voltage
Engine Stop Option Control	Generator Power Level Control	- Current / Voltage Asymmetry	- High / Low Water Temperature
Engine Speed (RPM) Level Control	Generator Work Schedule and Timing Control	- Overcurrent / Overload	- High / Low Load
Battery Voltage Options Control	Oil Pressure Controllers Control	Overheat Control	Mains, Generator ATS control
Check Engine Maintenance Times	Configurable Analog Inputs and Outputs	1 Phase or 3 Phase, Phase Selection	Network, Voltage, Frequency Display
Communication Interfaces GPRS, GSM	Keeping Error Records of Past Events	Parameter Setting via Control Module	Parameter Setting via Computer
Engine Speed	Configurable Programmable Digital Inputs and Outputs	Water Temperature	Hours of Operation
Voltage	Current and Frequency	Phase Sequence	Earting
Alarm Horn	Modbus and SNMP	Ground Leakage	Ethernet, USB, RS232, RS485
Heater Tube Thermostat Control	Working Hour	Analog Modem	Selectable Protection Alarm / Shutdown
Battery Voltage	Oil Pressure		

Control Module Alerts

Emergency Stop Malfunction	Low Generator Voltage	Low Water Temperature	Charge Alternator Error
High Generator Voltage	High Generator Frequency	Heat Sensor Broken	Unbalanced Load
Low Generator Frequency	Phase Sequence Error	Reverse Power	Maintenance Time Alarm
Low Load	Overload	Start Error	Low Speed
Over Current	Low Water Level (Optional)	Stop Error	High Speed
Unbalanced Current	Low Oil Pressure	Magnetic Pickup Error	Broken Oil Sensor Cable
High Oil Temperature (Optional)	High Battery Voltage	High Water Temperature	Electronic Canbus Errors (ECU)
Low Fuel Level (Optional)	Low Battery Voltage		

Sound Proof Canopy and Base Frame (Chassis) Specifications

Special, Registered GENPOWER Design and Color	Robotic Painting with Electrostatic Powder Paint	Temperature Tests	Fuel Inlet and Return Records
A1 Quality DKP / HRU /Galvanized Steel	Drying and Stabilizing on 200°C Ovens	Rustproof Accessories	Impermeability Test for Fuel Tank
Sensitive Twist on Automatic Press Brake	1500 Hour Salt Test	Cable Exit Connectors and Glands	Vacummed Rubber Mounted
Delicate Cut on Automatic Punch and Laser Bench	Glasswool Isolation, A1 Class Material - 50/+500ºC	Emergency Stop Button	High Quality Weatherstrips
Sensitive Welding on Robotic Welding Bench	Special Covering Over Glass Wool	Fuel Level Gauge	High Quality Shock Absorbers
Chemical Cleaning Nano Technology Before Painting	Best Sound Level (in dBA)	Fuel Drain Cap	Fuel Filling Cap (with ventilation)
Lifting and Carrying Equipments	External Exhaust Mufflers (Silencers)	Daily Fuel Tank	External Fuel Tank
Internal Exhaust Mufflers (Silencers)	Radiator Water Filling Cap		

Special Products / Non - Standardized

Synchronised Systems	Generators - with Trailer	DC Generators	High Frequency Generators
Scada Systems	Medium Voltage - MV	High Voltage - HV	Variable Speed Generators
Mobile Systems	IP44-IP54 Class Generators	Power Plants	Super Silent Canopy
Light Towers	Welding Machines	Trigeneration Systems	Cogeneration Systems
Ground Power Unit Generators	Natural Gas Generator	Biogas Generator	LPG Generator
Marine Generators	Automatic Voltage Stabilizers	Electrical and Diesel Forklift	HFO Generator
Dual Generators			

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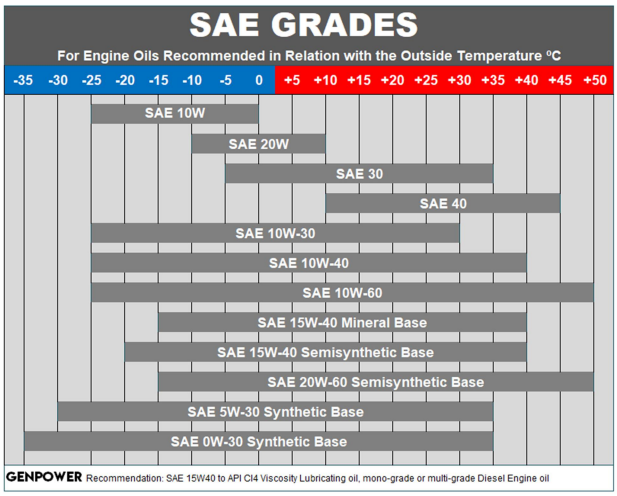
Generator Dimensions

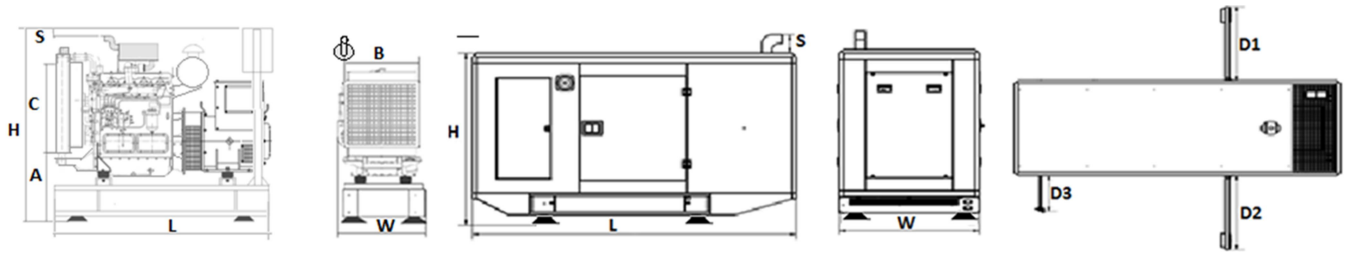
Values		Open Type Generator	Canopy Type Generator
Width	mm	700	1042
Length	mm	1900	2615
Height	mm	1562	1766
Weight (Net)	Kg	1024	1200
Fuel Tank Capacity	L	161	205

Oil Recommendation and Oil Grades



Generator Technical Drawings

SYMBOL	OPEN	CANOPY
L	1900	2615
W	700	1042
H	1562	1594
S	95	172
A	580	
B	530	
C	590	
D1		750
D2		750
D3		520
D4		
D5		



Why You Should Buy GENPOWER?

Only because it is the biggest generator factory in the World? NO!

* It is one of the most trustworthy and distinguished generator manufacturers in the world with its almost half century experience in the field.
* It has interiorized the strategy of **unconditional customer satisfaction** and has been working with this work ethic together with its whole crew.
* Customers and end users get their moneys' worth and more with every penny.
* It has become a big family with customers and users who receive durable, long-lasting and high quality products.
* It has been appreciated many times by customers and suppliers about the investments that have been made for quality enhancement.
* Both its suppliers and customers always know GENPOWER is and will always be there for them. GENPOWER on their side in bad and good days.
* In order not to harm brand reputation and recognition, each day, they work harder than the day before.
* It continues its business only with the suppliers, customers, dealers and technical services that also embrace the same mind set and work ethics.
* It proves its loyalty for quality and customer satisfaction with its mottos "**Your power is the core of our business**" and "**nothing will be left unfinished**"
* The specifications and/or modifications you can receive with extra costs by other manufacturers are included in standard production in GENPOWER
* When you purchase GENPOWER products, you are not a customer or a buyer but GENPOWER perceives and accepts you as a valuable member of its continuously growing family.

These are why you should buy from GENPOWER…

English 01-2022©2022 GDZ Series Generator

GENPOWER GENERATOR

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