GZ400

Engine ref.	D219TIC
Alternator ref.	5M4024

GENERAL CHARACTERISTICS

Frequency (Hz)	50
Voltage (V)	400/230
Standard Control Panel	DEC3000

POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
400/230	320	400	291	364	577

DIMENSIONS COMPACT VERSION

Length (mm)	3900
Width (mm)	1975
Height (mm)	2383
Dry weight (kg)	3888

DIMENSIONS SOUNDPROOFED VERSION

Commercial reference of the enclosure	SSE400
Length (mm)	7230
Width (mm)	2493
Height (mm)	2858
Dry weight (kg)	6429
Acoustic pressure level @1m in dB(A)	0
Sound power level guaranteed (Lwa)	0

DESCRIPTIVE

- Generating set running on natural gas or LPG (natural gas supplied configuration)
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for core temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts (CE option)
- 40 dB(A) silencer supplied separately
- Charger DC starting battery with electrolyte
- 12 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

POWER DEFINITION

PRP : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1. ESP : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1. Overload is not allowed.

TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Intlet Temperature, of a barometric pressure of 100 kPA (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

ASSOCIATED UNCERTAINTY

For the generating sets used indoor, where the acoustic pressure levels depends on the installation conditions, it is not possible to specify the ambient noise level in the exploitation and maintenance instructions . You will also find in our exploitation and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriated preventive measures.

Fuel System 50 Hz:

Natural gas fuel supply pressure, kPa (in. H2O) :
***Nat. Gas** : 1.74--2.74 (7-11)*

*Fuel Composition Limits * (Nat.Gaz):*

Methane, % by volume	*90 min.*
Ethane, % by volume	*4.0 max.*
Propane, % by volume	*1.0 max.*
Propene, % by volume	*0.1 max.*
C4 and higher, % by volume	*0.3 max*
Sulfur, ppm mass	*25 max.*

Lower heating value,MJ/m3 (Btu/ft3), min : 33.2 (890)

** Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications*

Online carburation entry : 1 (<=GZ100) / 1.5 (<=GZ150) / 2 (<=GZ250) / 3 (>=GZ300) NPTF

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ENGINE CHARACTERISTICS

GENERAL ENGINE DATA

Engine brand	DOOSAN by PSI
Engine ref.	D219TIC
Air inlet system	Turbo
Cylinders configuration	V
Number of cylinders	12
Displacement (L)	21,93
Charge Air coolant	Air/Air DC
Bore (mm) x Stroke (mm)	128,00 x 142,00
Compression ratio	10.5 : 1
Speed (RPM)	1500
Pistons speed (m/s)	7,10
Maximum stand-by power at rated RPM (kW)	370,00
Frequency regulation, steady state (%)	+/- 0.5%
BMEP (bar)	0,00
Governor type	Electronic

COOLING SYSTEM

Radiator & Engine capacity (L)	242,00
Max water temperature (°C)	110,00
Outlet water temperature (°C)	
Fan power (kW)	18,00
Fan air flow w/o restriction (m3/s)	12,30
Available restriction on air flow (mm H2O)	12,50
Type of coolant	Glycol-Ethylene
Thermostat modulating range HT (°C)	

EMISSIONS

Emission PM (g/kW.h)
Emission CO (g/kW.h)
Emission HC+NOx (g/kWh)
Emission HC (g/kW.h)

EXHAUST

Exhaust gas temperature @ ESP 50Hz (°C)	600
Exhaust gas flow @ ESP 50 Hz (L/s)	
Max. exhaust back pressure (mm H2O)	1000

FUEL

Gaznat Consumption @ 110% load (m3/h)	107,10
Gaznat Consumption @ 100% load (m3/h)	97,00
Gaznat Consumption @ 75% load (m3/h)	74,00
Gaznat Consumption @ 50% load (m3/h)	51,90

OIL

Oil capacity (L)	47,10
Min. oil pressure (bar)	
Max. oil pressure (bar)	
Oil consumption 100% load (L/h)	
Oil sump capacity (L)	40,0

HEAT BALANCE

Heat rejection to exhaust (kW)	
Radiated heat to ambiant (kW)	55,00
Haet rejection to coolant (kW)	377

AIR INTAKE

Max. intake restriction (mm H2O)
Intake air flow (L/s)

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ALTERNATOR CHARACTERISTICS

GENERAL DATA

Alternator commercial brand	KOHLER
Alternator ref.	5M4024
Number of Phase	Three phase
Power factor (Cos Phi)	0,8
Altitude (m)	0 à 2500
Overspeed (rpm)	2250
Number of pole	4
Capacity for maintaining short circuit at 3 In for 10 s	Yes
Insulation class	H
T° class (H/125°), continuous 40°C	H / 125°K
T° class, standby 27°C	H / 163°K
AVR Regulation	
Total Harmonic Distortion in no-load DHT (%)	1.46
Total Harmonic Distortion, on load DHT (%)	3.61
Wave form : NEMA=TIF	50
Wave form : CEI=FHT	1.5
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (+/- %)	1,00
Recovery time (Delta U = 20% transcient) (ms)	400
Indication of protection	IP 23
Technology	Without collar or brush

OTHER DATA

Continuous Nominal Rating 40°C (kVA)	475,0
Standby Rating 27°C (kVA)	506,0
Efficiencies 100% of load (%)	92,0
Air flow (m3/s)	0,604
Short circuit ratio (Kcc)	0,770
Direct axis synchro reactance unsaturated (Xd) (%)	257,0
Quadra axis synchro reactance unsaturated (Xq) (%)	97,0
Open circuit time constant (T'do) (ms)	1770,00
Direct axis transcient reactance saturated (X'd) (%)	15,1
Short circuit transcient time constant (T'd) (ms)	121,000
Direct axis subtranscient reactance saturated (X"d) (%)	12,7
Subtranscient time constant (T"d) (ms)	12,000
Quadra axis subtranscient reactance saturated (X"q) (%)	27,40
Subtranscient time constant (T"q) (ms)	
Zero sequence reactance unsaturated (Xo) (%)	4,800
Negative sequence reactance saturated (X2) (%)	20,00
Armature time constant (Ta) (ms)	21,000
No load excitation current (io) (A)	
Full load excitation current (ic) (A)	
Full load excitation voltage (uc) (V)	
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	525,00
Transcient dip (4/4 load) - PF : 0,8 AR (%)	14,00
No load losses (W)	7650,00
Heat rejection (W)	33472,00
Unbalanced load acceptance ratio (%)	

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CONTROL PANEL

DEC3000, comprehensive and simple

Generator Controls / Decision-Maker® 3000

The Decision-Maker® 3000 generator set controller provides advanced control, system monitoring, and system diagnostics for optimum performance. The Decision-Maker® 3000 controller meets NFPA 110, Level 1 when equipped with the necessary accessories and installed per NFPA standards. The Decision-Maker® 3000 controller uses patented software logic to manage sophisticated functions, such as voltage regulation and alternator thermal overload protection, normally requiring additional hardware. Additional features include:
- A digital display and pushbutton/rotary selector al provide easy local access to data.
- Measurements selectable in metric or English units.
- Scrolling display shows critical data at a glance.
- Digital display of power metering (Kw and Kva).
- Integrated hybrid voltage regulator providing ±0.5% regulation.
- Built-in alternator thermal overload protection.