



DIESEL GENSET MODEL SGB 500 PR-IV



Optional equipment and finishing shown. Standard may vary.

Rating	500 kVA / 400 kWe
Voltage	415 Volts
Frequency	50 Hz
Speed	1500 RPM

PRODUCT HIGHLIGHTS

Diesel Gen Set Package

- Genset Designed to comply with ISO 8528.
- Excellent performance under most demanding environmental conditions
- Near zero down time for continuous power supply
- Sturdy base frame
- Efficient anti-vibration mounts
- Stringent shop floor testing to ensure class leading, hassle-free performance
- Testing carried out using state-of-the-art PLC based, resistive load bank

Engine Features

- Cooling System Designed for 50°C ambient
- Cast iron cylinder block with rugged body construction designed to minimize vibration & noise level
- High carbon steel forged crankshaft with induction hardening
- Full flow oil filter along with lube oil cooling to maintain optimum temperature
- Cast iron dry liners, lube oil cooled aluminium alloy piston with high performance piston rings
- High power to weight ratio with low life cycle cost
- Air intake, exhaust manifold and turbocharger provided with shield to isolate heat
- HPCR Pump with ECU control providing efficient performance in terms of power & fuel consumption
- Electronic governing
- Fast load response
- Stable frequency
- Excellent fuel and lube oil consumption
- Engine complying to ISO 3046-1/1, ISO 15550 standard reference conditions.

Alternator Features

- Brushless type, screen protected, self-excited alternator complying to IS:13364/IEC 60034 – 1
- Excellent motor start capability
- Excellent alternator efficiency across the load range
- Compact design with sealed bearings for longer life and lower maintenance
- Optimised engine compatibility

APPLICATION DATA

► Engine

Engine Make	Baudouin, India
Engine Model	6M21G6D4/5
Distribution	4 Strokes
Aspiration	Turbocharged
No. of Cylinders	6
Type of Construction	In line
Displacement	12.54 L
Bore / Stroke	127x165 mm
Mean Piston Speed	8.25 m/s
Compression ratio	15.7:1
Gross Engine Power @ 100% PRP	450 kWm/604 bhp
Gross Engine Power @ 110%	490 kWm/657 bhp
Rated Speed	1500 RPM
Frequency	50 Hz

► Cooling System

Method of Cooling	Radiator
Coolant Capacity	62L
Radiator Fan Power	12kW
Thermostat Operating Range	76 / 88 °C
Coolant Alarm (Shutdown) Temperature	106 °C

► Fuel System

Governor	Electronic (ECU)
Governing Class	G3 as per ISO:8528-5
Fuel Injection type	High Pressure Common Rail (HPCR)
Recommended Fuel	IS 1460/ BS2869 Part1 Class A1

Fuel Consumption: L/hr @ Specific Gravity 850 gms/Litre

100% Load	99.0
75% Load	75.4

*Note: Fuel Data Confirms to ISO 3046 with +5% tolerance

► Lubrication System

Recommended Lube Oil	15W 40 CK4
Lube Oil System Capacity	34 L
Lube Oil Consumption	<0.2 % of FC

► Exhaust System

After Treatment System	Available
Location	In Front of Radiator
Max Back Pressure Total System	12 kPa
Exhaust outlet pipe size (min)	105 mm
Exhaust Gas Temperature	≤ 600 °C
DEF Tank Capacity	70 L

► Induction System

Air Filter Type	Paper Element
Air Intake Restriction (Dirty element)	6.5 kPa

► Electrical System

Electrical System Voltage	24 V DC
Starter Motor Power	8.5 kW
Battery Size	2x12V, 150 Ah

► Alternator

Make***	Leroy Somer
Frame	LSAP 47 C
Power Factor	0.8
No. of Phase	3
Frequency	50 Hz
Rated Voltage (L-L)	415 V
Rated Current	695 Amps
Voltage Regulation	±1%
Insulation System	H Class
Temperature Rise Limit	H Class
Winding Pitch	2/3
Over Load	10 % Over Load for 1 hour once in 12 hours
Waveform Distortion	No-Load < 1.5%
Design Ambient for Alternator	40 °C
Altitude	1000 m
Protection	IP23
Cooling	Air Cooled
Air flow	0.9 m3/sec
Coupling	Single bearing
Maximum Over Speed	1650 RPM
Stator Winding	Double layer concentric
Control System	Self regulated & self excited
Excitation System	Brushless (Shunt)
AVR Type	Analogue
AVR Model	R 150
Performance: Efficiency @0.8 p.f	
100%	94.10%
75%	94.40%

Short Circuit Ratio	0.337
Xd Dir Axis Reactance	2.97
X'd Dir Axis Transient Reactance	0.198
X''d Dir Axis Sub Transient Reactance	0.163
Xq Quad Axis Reactance	1.459
X''q Quad Axis Subtransient Reactance	0.182
Xl Leakage Reactance	0.09
X2 Negative Sequence Reactance	0.171
X0 Zero Sequence Reactance	0.007

***Alternator Options available with CG & Stamford.

DG CONTROL PANEL

► Operating Features

- Microprocessor based digital controller
- Accurate LCD display
- Local Start/Stop
- Remote Start/Stop
- Generator breaker control
- Easily Accessible through Fascia
- Flexibility for selecting Manual, Auto operations
- Easily Convertible AMF by giving Mains Fail Signal

► Metering

Engine Parameters:

- Engine Speed
- Lube Oil pressure
- Coolant temperature
- Engine Running Hour
- Engine Battery voltage
- Running status
- Fuel level in Percentage
- Event Log with date and time

Electrical Parameter

- Generator Voltage (Ph-Ph)
- Generator Voltage (Ph-N)
- Generator Current (R,Y,B)
- Generator Apparent power (kVA)
- Generator active power(kW)
- Generator reactive power (kVAr)
- Generator Power Factor
- Generator Frequency (Hz)
- Cumulative Power Consumption in kWh
- Cumulative Power Consumption in kVAh
- Cumulative Power Consumption in kVArh
- Control Supply Voltage

► Protection

Engine

- High Water Temperature
- Low oil pressure
- Low Fuel Level
- Over Speed
- Engine Fails to Start

Electrical

- Generator under Voltage (ANSI-27)
- Generator over Voltage (ANSI-59)
- Generator under Frequency (ANSI-81L)
- Generator over Frequency (ANSI-81H)
- Generator over Current (ANSI-51)
- Control Supply under Voltage
- Control Supply over Voltage
- Phase Reversal
- Unbalanced Load

► Controller

DEIF, Denmark make SGC 420 MK II controllers are modern genset controllers for AMF applications with an electronically controlled engine (CANbus) and AMF applications with electronic governor.



► Controller Feature

- User-friendly interface and backlite full graphics LCD
- Battery voltage monitoring & reverse protection to aux supply
- 7/9 configurable analogue/digital inputs
- Auto, Manual and Remote Start/Stop Operation
- Island Operation
- Automatic Mains Failure Function
- CANbus Engine interface for communication
- Log with latest 100 events
- Fully configurable via PC using USB, RS485 communication
- DC Battery supply voltage range 8 to 32V
- -20 to 65 °C operating temperature range
- IP65 Protection class with gasket
- LCD alarm indication
- Power save mode
- 7 configurable Digital output

► Electrical Specification

- Supply Voltage Range: Nominal Voltage - 12/24 V DC
- Cranking drop out period: 50 ms
- Maximum reverse voltage protection: -32 V DC
- Measurement accuracy (battery voltage): ± 1 % Full scale
- Resolution: 0.1 V
- Maximum current consumption ~200 mA
- Measurement accuracy (battery voltage) - ± 1 % full scale

► Environmental Specification

- Operating Temp: -20 to 65°C in compliance with 60068-2-1, 2
- Vibration: 2G in X, Y and Z axes for 8 to 500Hz in compliance with IEC 60068-2-6
- Shock: 15 g for 11 ms in compliance with IEC 60068-2-27
- Humidity: 0 to 95% RH in compliance with IEC 60068-2-78
- Protection Degree: IP65 Protection class with gasket in compliance with IEC60529
- EMI/EMC in compliance with IEC 61000-6-2, 4

► Approvals

- CE Compliant
- UL/cUL Recognized to UL/ULC6200:2019 1st edition

STANDARD SCOPE OF SUPPLY

- Water cooled DIESEL engine
- Engine driven Radiator
- Electric starter & charging alternator
- Electronic governor
- Microprocessor based genset controller
- Dry Type air filter
- Single bearing IP 23 Alternator
- Base frame with anti vibration mounts
- Flexible fuel lines & lube oil drain pump
- Fuel water separator filter (engine mounted)
- Exhaust outlet with Flexible and flanges
- DG Control Panel
- Battery, Battery Lead & Battery stand
- Day fuel tank with High / Low level switch
- First Fill lube oil
- First Fill Coolant
- 1 Set Of Documents

Output Rating & Definition

DG Set Rating @ 415V - 50 Hz | 500 KVA | 400 kWe

Note: Ratings at 0.8 power factor.

► Definition

Prime Power: Applicable for supplying power for varying electrical load for unlimited hours. Prime power (PRP) is in accordance with ISO 8528. A 10% overload capability is available in accordance with ISO 3046.

Salient Features of Sterling Generators

- Sterling provides a range of Baudouin engine powered generating sets which are recognized for reliability.
- Global technology available in India.
- Most energy efficient D. G. set.
- Microprocessor based control panels.
- Wider maintenance intervals.
- Pre tested at factory with PLC test bench.
- Well experienced and trained engineers for after sales support.
- Designed to meet the latest environmental norms
- Seamless 24 x 7 service support
- Energetic team with highly experience in troubleshooting.

General Information

► Documentation

A full set of operation and maintenance manuals and circuit wiring diagrams.

► Warranty

Please refer warranty policy.

► Factory

Sterling Generators Pvt Ltd

Survey No: 59, 343/1, Village Kala, Kherdi,

Khanvel, Silvassa, UT of Dadra & Nagar Haveli - 396 230.

Optional Supply

Engine

- Coolant heater
- Oversize batteries
- Extra fuel pre-filter water separator

Alternator

- Permanent Magnet Generator (PMG)
- Space Heater, RTD & BTD sensor
- Upgrade to 3 phase sensing AVR
- Air inlet filters

Cooling System

- Heat exchanger
- Remote Radiator

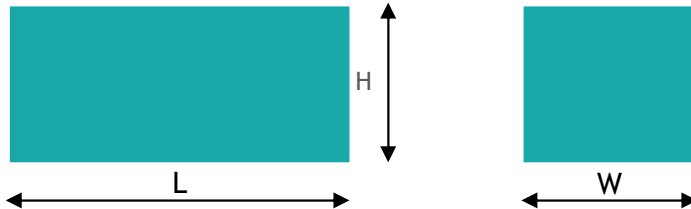
General

- Synchronisation module
- Isolator panel
- Automatic transfer switch
- Fuel transfer pump Automatic / Manual

Dimensions & Weights

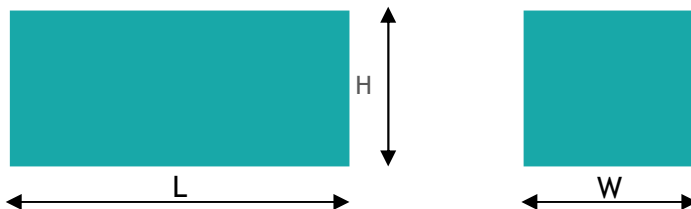
► Open Set

Length = L	mm	
Width = W	mm	
Height = H	mm	NA
Weight, Dry	kg	
Day Fuel tank (Litres)		



► Acoustic Set

Length = L	mm	5700
Width = W	mm	2100
Height = H	mm	3113
Weight, Dry	kg	6871
Day Fuel tank (Litres)		900



Special Condition

For specific site conditions of installation, please refer to application engineering.



The Data Mentioned in this Data Sheet are Subject to Change without Prior Notice , Due To Continuous Improvement & Research