

DIESEL GENERATOR SET

Durable | Robust | Built to Last

DG Model : PBDN 400

415 V, 3-PH, 50 Hz

DESIGNED IN FRANCE MADE IN INDIA

www.perfecthouseltd.in



Unique Advantages Of Perfect Baudouin DG Set

- French technology with make in India product.
- Flexible & creative customized solutions to meet customer needs,
- Single window solution-3s (sale-service- spare parts) erection, installation
- Cast iron cylinder block with rugged body construction designed to minimize vibrations
- Hardened steel forged crankshaft with induction hardening
- Cast iron wet liners, lube oil cooled aluminum alloy pistons with high performance piston rings
- Separate cast iron cylinders heads with 4 valves for efficiency and ease of maintenance
- Cast iron centrifugal freshwater pump
- Full flow multilevel type oil filters along with electrical pump to pre-lubricate engine, reduce friction and better start-ability
- Multilevel fuel filter with water separator to protect engine
- Exhaust manifold & turbo charger provided with shield to isolate heat, More than 50% block loading capacity
- ISO 9001, 14001 and OHSAS 18001 certified

Standard Scope Comprising

Diesel Engine/ AC Generator/ Base frame/ Standard Control Panel/ Radiator/ Silencer/ Battery & Battery Cable/ Battery Charger / AVMs/ First Fill of Lube Oil/ First fill of Coolant/ DG Set Controller/Fuel Tank DEF Tank/ATS Module/Wiring Harness/ Sensors.

One Stop Solution (Optional)

Customised Power Solutions, Installation, Commissioning, Operations Contract, Amc/ Camc, Renting Power, Hybrid Solution, Electric Board Approval, Electrical Options Amf/ Auto Synchronising Panel

DG Technical Specification

400 kVA DG SET TECHNICAL SPECIFICATIONS

Engine		Induction System	
Engine Make	Baudouin, India	Air Filter Type	Paper Element
Engine Model	6M21G440/5E3	Air Intake Restriction (Dirty element)	7.0 kPa
Distribution	4 Strokes		
Aspiration	Turbocharged	Electrical System	
No. of Cylinders	6	Electrical System Voltage	24 V DC
Type of Construction	In line	Starter Motor Power	7.5 kW
Displacement	12.54 L	Battery Size	2x12V, 150 Ah
Bore / Stroke	127x165 mm		
Mean Piston Speed	8.25 m/s	Alternator	
Compression ratio	16:1	Make***	Stamford
Gross Engine Power @ 100% PRP	368 kWm/494 bhp	Frame	HCI444D
Gross Engine Power @ 110%	405 kWm/543 bhp	Power Factor	0.8
Rated Speed	1500 RPM	No. of Phase	3
Frequency	50 Hz	Frequency	50 Hz
		Rated Voltage (L-L)	415 V
Cooling System		Rated Current	556 Amps
Method of Cooling	Radiator	Voltage Regulation	±1%
Coolant Capacity	55 L	Insulation System	H Class
Radiator Fan Power	21 kW	Temperature Rise Limit	H Class
Thermostat Operating Range	76 - 88 °C	Winding Pitch	2/3
Coolant Alarm Temperature	105 °C	Over Load	10 % Over Load for 1 hour once in 12 hours
		Waveform Distortion	No-Load < 1.5% NDBLL<5%
Fuel System		Temperature Ambient	40 °C
Governor	Electronic (ECU)	Altitude	1000 m
Governing Class	G2 as per ISO:8528-5	Protection	IP23
Fuel Injection Type	High Pressure Common Rail (HPCR)	Cooling	Air Cooled
Recommended Fuel	IS 1460/ BS2869 Part1 Class A1	Air flow	0.8 m3/sec
Fuel Tank Capacity	700 L	Coupling	Single bearing
Fuel Consumption: L/hr @ Specific Gravity 0.85 gms/Litre		Maximum Over Speed	1650 RPM
100% Load	85.0	Stator Winding	Double layer lap
75% Load	63.5	Control System	Self excited
*Note: Fuel Data Confirms to ISO 3046 with +5% tolerance		Excitation System	—
		AVR Type	Analogue
Lubrication System		AVR Model	AS440
Recommended Lube Oil	CI4+SAE15W-40	Performance: Efficiency @0.8 p.f	
Lube Oil System Capacity	30 L	100%	93.50%
Lube Oil Consumption	< 0.2 % of FC	75%	94.30%
		Short Circuit Ratio	0.439
Exhaust System		Xd Dir Axis Reactance	2.28
Silencer Type	Residential-grade	X'd Dir Axis Transient Reactance	0.15
Number of Silencers	1 No.	X''d Dir Axis Sub Transient Reactance	0.11
Max Back Pressure Total System	12 kPa	Xq Quad Axis Reactance	1.97
Exhaust Outlet Pipe Size (min)	100 mm	X''q Quad Axis Subtransient Reactance	0.26
Exhaust Gas Temperature	≤ 580 °C	XI Leakage Reactance	0.05
		X2 Negative Sequence Reactance	0.19
		X0 Zero Sequence Reactance	0.07
		***Alternator Options available with CG & Leroy Somer.	

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

The DSE 4520 MKII Is A Compact Auto Mains (utility) Failure Control Module That Has Been Developed To Provide An Outstanding Range Of Features Within A Compact Enclosure.

The Module Can Be Configured For Use As An Auto Start Control Module.



► 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): $\pm 1\%$ Full scale
- Resolution: 0.1 V
- Maximum current consumption ~200 mA
- Measurement accuracy (battery voltage) - $\pm 1\%$ full scale

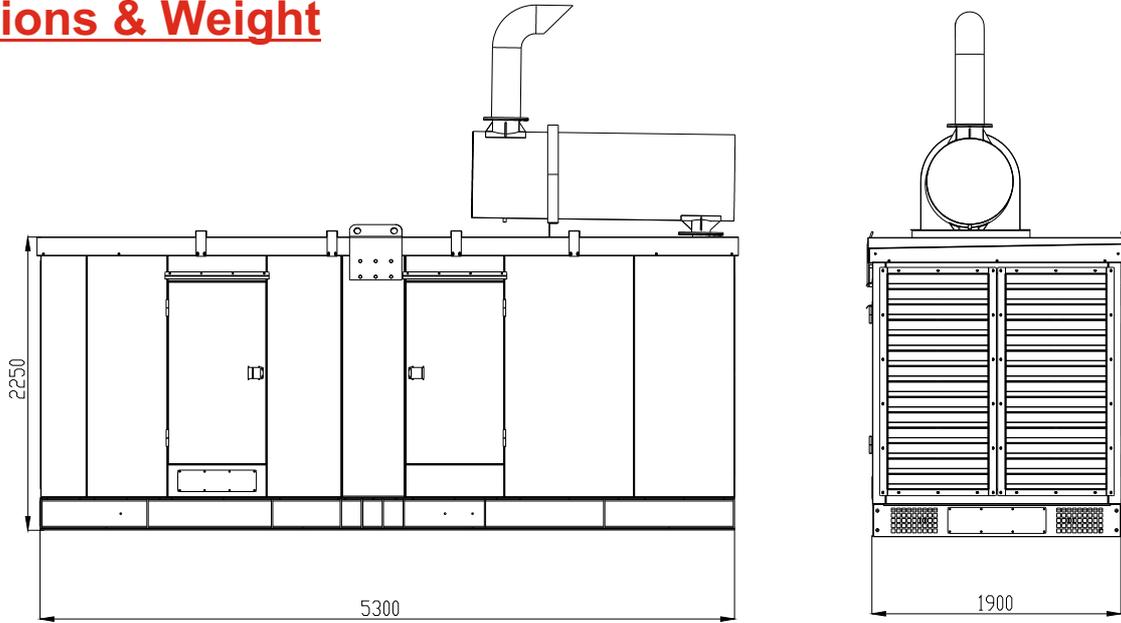
► Environmental Specification

- 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

Dimensions & Weight



Overall Size (L x W x H) : 5300x1900x2250 mm

Weight (Dry, Max) : 5850 Kg

NOTE: Drawing provided is for reference only and should not be used for planning installation. Please contact the Company or latest updated details. All the data is as per respective manufacturers' specification. PERFECT reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Disclaimer: Due to continues product improvements, specifications are subject to change without prior.



60+
of Legacy

5GW+
of Power Delivered

Globally Certified

800+
Employees Across the Globe

24*,000 sq.ft
Manufacturing Unit

2,00,000+
Power Generators Supplied

35+
Countries Powering Global Success



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