

## BIOGAS GENERATOR SET TECHNICAL DATA



Model: KDGH50-G

Standby power : 64kw/80kVA

Continuous power : 50kW/63kVA

Frequency: 60HZ

Speed: 1800RPM

Voltage: 380/220V

Fuel: Biogas



★ *biogas gensets running in Australia poultry farm*

## Section A Technical Specification

### Genset working condition:

- **Acceptable working conditions:**

Ambient temperature:  $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$   
 (Antifreeze or hot water needed for below  $-20^{\circ}\text{C}$ )  
 Relative humidity:  $<90\%$  ( $20^{\circ}\text{C}$ )  
 Altitude:  $\leq 500\text{m}$

- **Applied gas: Biogas**

Acceptable fuel gas pressure:  $10\sim 20\text{kPa}$   
 $\text{CH}_4$  content  $\geq 45\%$   $\text{CH}_4$   
 Gas doesn't include free water or free materials (the size of impurities should be less than  $5\mu\text{m}$ )  
 **$\text{H}_2\text{S}$  content  $\leq 150\text{ppm}/\text{Nm}^3$**   
 $\text{NH}_3$  content  $\leq 20\text{mg}/\text{Nm}^3$   
 Impurities content  $\leq 30\text{mg}/\text{Nm}^3$ ; size  $\leq 5\mu\text{m}$   
 Water content  $\leq 40\text{g}/\text{Nm}^3$ , no free water.

### Genset Specification

Biogas genset data	
Genset model	<b>KDGH50-G</b>
Standby power	64kW/80kVA
Continuous power	50kW/63kVA
Connection type (V)	3 Phases 4wires
Power factor cosfi	0.8 lagging
Frequency (Hz)	60
Voltage(V)	380/220V
Rated speed (RPM)	1800
Electrical efficiency	32%
Biogas consumption	$30\text{m}^3/\text{hour}$
Thermal power	73kWt
Thermal efficiency	47%
Total efficiency	79%
Soundproof type Genset Dimension (mm)	4500*1500*2300
	2450

<b>Biogas Engine Data</b>	
<b>Model</b>	<b>HGT6B</b>
Brand	ROCK POWER-CUMMINS
Engine output	72kWm @1800RPM
Type	4 stroke, water-cooling, dry cylinder liner, electronic-control ignition system, pre-mixed perfect mixed burning
Cylinders& Arrangement	6 in line
BoreXStroke(mm)	102X120
Displacement(L)	5.88
Compression ratio	10.5:1
Aspiration	Turbocharged
Gas mixer	Hugli Tech, automatic Air/Fuel Ratio control
Gas valves	Intake 2 & exhaust 2 per cylinder
Gas inlet pressure	2 to 10kPa
Ignition timing	1-5-3-6-2-4
Ignition controller	Altronic CD1 unit
Cooling Method	Radiator fan water cooling
Governor type (speed regulating type)	Electronic governing
Starting method	Electric, 24 V motor
Idling speed (r/min)	700
Oil recommended	SAE 15W-40 CF4 or above
Oil consumption	≤0.6g/kW.h
<b>Leroy Somer Alternator Data</b>	
<b>Brand</b>	<b>Leroy Somer</b>
<b>Model</b>	<b>LSA44.3S2</b>
Continuous power	55kW / 3 phases, 4 wires
Rated Voltage	380/220V
Type	3 phase/4 wire, brushless, automatic voltage regulator, drip proof, protected type.
Frequency (Hz)	60
Efficiency:	91.7%
Voltage regulation	± 0.5 %(adjustable)
Insulation class:	Class H
Protection class:	IP 23
cooling method:	wind-cooling, self-heat-rejection
Voltage regulating mode	Automatic voltage regulator
Compliant with international standards:	IEC 60034-1, NEMA MG1.22, ISO 8528/3, CSA, UL 1446, UL 1004B on request, marine regulations, etc.

**ComAp Control Panel IG-NT (Controller IG-NTC-BB connected with IntelliVision Display screen)**



ComAp IntelliGen NTC BaseBox is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes. The detachable modular construction allows easy installation with the potential for many different extension modules designed to suit individual customer requirements.

IntelliGen NT BaseBox can be connected with IntelliVision 5 display screen which is 5.7” Color TFT display screen.

**Features**

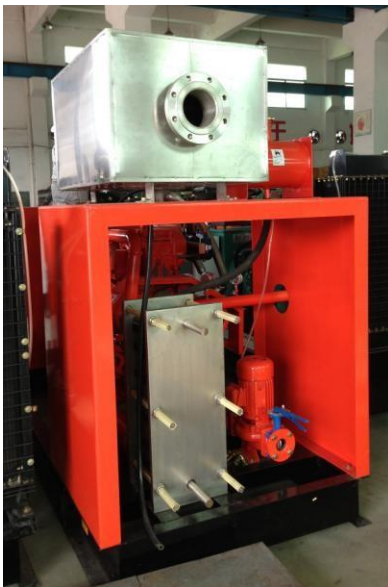
1. Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text form
2. AMF function
3. Automatic synchronizing and power control (via speed governor or ECU)
4. Base load, Import / Export
5. Peak shaving
6. Voltage and PF control (AVR)
7. Generator measurement: U, I, Hz, kW, kVA, PF, kWh, kVAhr
8. Mains measurement: U, I, Hz, kW, kVA, PF
9. Selectable measurement ranges for AC voltages and currents – 120 / 277 V, 0–1 / 0–5 A 1)
10. Inputs and outputs configurable for various customer needs
11. Bipolar binary outputs – possibility to use
12. BO as High or Low side switch
13. RS232 / RS485 interface with Modbus support;
14. Analog / GSM / ISDN / CDMA modem support;
15. SMS messages; ECU Modbus interface
16. Secondary isolated RS485 interface 1)
17. Ethernet connection (RJ45) 1)
18. USB 2.0 slave interface 1)
19. Controller redundancy
20. Event-based history (up to 1000 records) with
21. Customer selectable list of stored values; RTC; statistic values
22. Integrated PLC programmable functions
23. Interface to remote display unit (IntelliVision 5 RD)
24. DIN-Rail mount

## Section B – Accessories Configurations



### 1. Compact soundproof canopy

1. All canopy parts are designed with modular assembly.
2. Doors on canopy each side
3. All metal canopy parts are painted by electrostatic polyester powder paint, painted against corrosion and weatherproof.
4. Emergency stop push button is installed on the outside of sound-proof canopy.
5. Especially chosen soundproof materials to decrease noise level.
6. Exhaust silencer is protected against various environment conditions.
7. Exhaust system is insulated thermally from other parts.
8. Easy lifting and moving, convenient operation and maintenance.



### 2. Heat recovery for CHP

Material	<b>Stainless steel</b>	
Heat exchangers	Engine cylinder water heat exchanger and exhaust gas heat exchanger	
Inlet water temperature		60°C
Outlet water temperature		80°C
Features:		
1. Increase the total efficiency		
2. Hot water can be used for the life and industrial use		



### 3. Grid synchronization panel

Model	<b>KD50-SP</b>
Air circuit breaker brand	ABB
Controller brand	ComAp IG-NTC-BB
Features:	
1. Automatically synchronize gen-set with mains grid	
2. Automatically unload the gen-set	
3. Programmed start and stop gen-set	
4. Gen-set controlling, monitoring and protecting	



**Durapower Asia Pte. Ltd.**

Office address: 194 Pandan Loop, # 07-07 Pantech Business  
Hub, Singapore 128383.

Website: [www.durapowerasia.com.sg](http://www.durapowerasia.com.sg)

Email : [richateng@durapowerasia.com.sg](mailto:richateng@durapowerasia.com.sg)  
[richie.durapowerasia@gmail.com](mailto:richie.durapowerasia@gmail.com)

Tel : +65-65605113

Fax : +65-65614002