

VPOWER HOLDINGS LIMITED

HKEx Stock Code: 1608

VGS1700 DIESEL GENERATOR SET

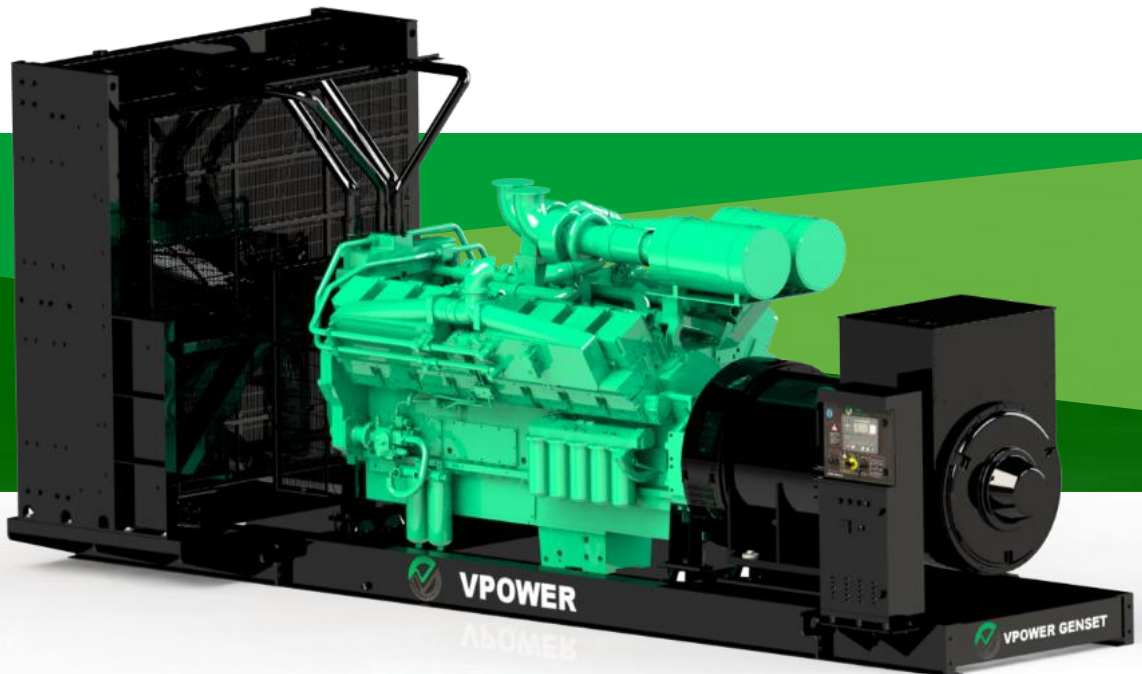
TECHNICAL DESCRIPTION

CUMMINS QSK50-G4

For PRIME and STANDBY Application

50Hz 1500RPM

powered by



50Hz at 0.8 Power Factor 380- 415V 3-Phase Rated Voltage**PRIME**
1232kW / 1540 kVA@40°C**STANDBY**
1360kW / 1700kVA@27°C**GENERATOR SET PERFORMANCE**Application

A factory designed generator set equipped with a standard AC/DC generator control panel. The generator set is ready to be connected to your fuel and power line to start up once the installation is completed.

Applicable Definitions

Standby: Designed for emergency backup system. The standby rating is applicable to varying loads for the duration of a power outage, No overload capability and average Load Factor $\leq 80\%$. Max 200 operating hours annually.

Prime: Designed for continuous, peak load operations and emergency backup system at varying load in the event of normal utility power interruption. With 10% overload capability for a maximum of 1 hour in every 12 hours and average Load Factor $\leq 70\%$. Unrestricted operating hour.

Applicable Standard

Generator sets design, assembly and testing meet or exceed international standards, including IEC 34-1, BSEN60034, BS5000, ISO9001:2008, ISO14001:2004.

The power rating is set in accordance with ISO 8528, ISO 3046-1, GB/T2820-97.

Structure Outline

The generator set has selected materials and equipment of high performance, which are durable and anti-vibration. The assembly work is fully according to the quality control system. The single bearing alternator frame is coupled to the engine housing directly. With one end of the rotor is supported by bearing and the other end of rotor shaft is connected to the engine flywheel with a steel laminate plates.

The concept of the design and manufacturing is for easy operation and maintenance, to be compact and light weight. With the high level quality control system, we offer Reliability, Flexibility, and Economical power supply system to satisfy the demands from different kinds of application.

Advantage of VPower Genset

Designed, assembled and tested completely according to quality control system;

With excellent load acceptance capacity of up to approx. 65%; significantly low fuel consumption; low emissions;

Advanced monitoring and communication systems, genset can operate from the island operation to grid parallel, fit with different operation.

Rubber Isolator Mounting

According to design and the rubber isolators are mounted between engine, alternator and its common skid base.

Applicable Conditions

Installation Place : Indoor
Ambient Temperature : 0°C ~ 40°C
Ambient Humidity : < 99%
Altitude : 110m

Painting Color

Engine : Green
Alternator : Black
Generator Control Panel : Black
Skid Base : Black

* Materials and specifications are subjected to change without prior notice.

TECHNICAL DATA

50Hz / 1500RPM / 380-415V

ENGINE	Maker and Model		Cummins QSK50-G4
	Rating Type		Prime / Standby
	Engine Output (Prime)	HP	1806/2008
		kWm	1328/1477
	Engine Load Acceptance	kWe	~800.8(~65%)
	Aspiration		Turbocharged and Low Temperature Aftercooled
	Cylinder Arrangement		16V
	Type		Water Cooled, 4 Cycles, Overhead Valve
	Bore x Stroke	mm x mm	159 x 159
	Piston Displacement	Liter	50.3
	Starting Method		Electric Motor, 24V – 8.95kW x 2
	Charging Alternator		DC 24V –35A (Brushless)
	Cooling Fan and Diameter	mm	8 Blades Pusher Type, 1600
	Oil Cooler		Water Cooled, Multi-plate Type
	Air Cleaner		Dry Type, 2 Stage Paper Element
	Stop Solenoid		Energized to Run Mode
	Flywheel Housing / Flywheel		SAE #0 / SAE #18 (Metric Tread)
	Flywheel Ring Gear Teeth		142
	Battery (Lead Acid Type)		DC 12V – 200Ah x 4 pcs
	Frequency Regulation, Stead State	%	≤±0.5
Frequency Regulation, Transient State	%	≤±10	
Frequency Stable Time	s	2	
Frequency Waving	%	≤±0.25	
Frequency Regulation Range	%	±5.0	
ENGINE LUBRICANT	Oil Pan (High / Low Level)	Liter	204/ 174
	Oil Filter /By-pass Filter	Liter	30
	System Total	Liter	235
	Grade		SAE #15W-40 API, Class CH, CI
ENGINE COOLANT	Radiator and Ambient Temp.	°C	Corrugate Fin Type, 40
	Cooling System		Forced Circulation by Centrifugal Water Pump
	Engine Capacity	Liter	140
	Radiator Capacity	Liter	TBA
	Radiator Heat Rejection	kW	930
ENGINE DATA	Pressure Mean Effective (PME)	bar	23.51
	Mean Piston Speed	m/s	7.9
	Sound Level (Average at 1m)		
	Full Load	dB(A)	103
	Speed Regulation	%	Cummins MCERS , within 5
	Thermostat (Wax Type)		
	Water Coolant	°C	Cracking 82, Fully Open 93
	Engine Shutdown Device		
	Coolant Temp (Sensor Type)	°C	102 + 3%
Oil Pressure (Sensor Type)	kPa	98 + 3% (1.0 + 3% bar)	
FUEL CONSUMPTION	BSFC (at 100% Load)	g/kWh	203
	Lubricating Oil (Nominal Value)	%	1.05
	Fuel Rate	Liter/h	317

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VGS1700



Open Type Generator Set

TECHNICAL DATA

50Hz / 1500RPM / 380-415V			
ALTERNATOR	Model	LSA50.2VL10	
	Construction	Single Bearing, Self Ventilated	
	Control System	R450 AVR with AREP Excited	
	Insulation	Class H	
	Protection	IP23	
	Rated Power Factor	0.8	
	Efficiency (Cont. 100%)	95.6	
	No of Pole and Phase	4 Poles 3 Phase 4 Wire	
	Stator Winding	Double Layer lab	
	Winding Pitch	2/3	
	Winding Leads	6	
	Voltage Regulation, Stead State	≤±0.5	
	Voltage Regulation, Transient State	+20 ~ - 15	
	Voltage Stable Time	≤0.5	
	Voltage Waving	≤±0.5	
	Voltage Regulation (at No Load)	95 ~ 105	
	Voltage Waveform Distortion		
	No Load	< 1.5	
	Non-Distorted Balanced Linear Load	< 5	
	Maximum Overspeed	rpm	2250
Telephone Interference	%	THF<2 / TIF<50	
Voltage Dip at 15%	kVA	~1750kVA	
Voltage Dip at 20%	kVA	~2450kVA	
AIR VENTILATION	Combustion Air Flow	m3/min	111.6
	Cooling Fan Air Flow	m3/min	TBA
	Alternator Air Flow	m3/min	108
	Total	m3/min	TBA
EXHAUST GAS	Gas Flow (at Full Load)	m3/min	279.6
	Temperature (at T/C Outlet)	°C	505
	Allowable Back Pressure	mbar	68
	Bellow Size (Inner Diameter)	mm	TBA
RECOMMEND	Diesel Fuel (Grade)		ASTM D975, 1-D or 2-D
	Pipe Size of Fuel Line		
	Supply (Minimum)	Inch	TBA
Return (Minimum)	Inch	TBA	
GENERATOR CONTROL PANEL	Genset Controller		Deep Sea DSE7320
	Analog Measurement	°C	Coolant Temperature
		Bar	Engine Oil Pressure
		PRM	Engine Speed
		V	Battery Voltage
		Hrs	Hour Run
		%	Fuel Level (Optional)
	AC Measurement	V	Gen U1 – U3
		A	Gen I1 – I3
		Hz	Gen Frequency
		kW	Gen Active Power
		kVAr	Gen Reactive Power
		kWh	Gen Power Consumption
		V	Mains U1 – U3
		Hz	Mains Frequency
	V	Mains Voltage (L1-L2, L2-L3, L3-L1)	

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GENERATOR CONTROL PANEL	Default Protection Settings	
	Low Oil Pressure	Bar < 1.5
	High Coolant Temperature	°C > 100
	Over Speed	RPM > 10% of RatedSpeed
	Fail to Start	Sec. > 39 (failed to start up after 3 attempts)
	Low / High Battery Voltage	V 18 / 30
	Charge Fail	V < 18
	Under / Over Gen Voltage	V 70% / 110% of Rated Voltage
	Under / Over Gen Frequency	Hz 85% / 110% of Rated Frequency
	Over Current	A > 120%(IDMTL)
	Push Buttons	
	MODE →	Selection of Genset operation mode (OFF, MAN, AUT push button)
	HORN RESET	Deactivates the "HORN"
	FAULT RESET	Acknowledges faults and alarms
	START	Start Genset
	STOP	Stop Genset
	MCB ON/OFF	Manual open/close the Mains CB
	PAGE	Cyclic selection of the display mode (MEASUREMENT ◀ ▶ ADJUSTMENT)
	△	Select set point, screen or increase set point value
	▽	Select set point, screen or decrease set point value
✓	Confirm set point value	
LED's (from left to right)		
<p>MAINS FAILURE: Green LED activated when the mains present, green LED unlit while 'mains failure' occurred and Genset does not run.</p> <p>MCBON: Green LED activated if MCB is closed. It actuated by feedback signal.</p> <p>GCBON: Green LED activated if GCB is closed. It actuated by feedback signal.</p> <p>GEN VOLTAGE PRESENT: Green LED activated when the genset present, green LED unlit while 'genset output failure' or genset does not run.</p>		
Emergency Stop Button	Stop Genset in case of emergency	
Key Switch	ON/OFF Power to the control panel	
LED	Common Engine Fault LED	
Buzzer	Audible alarm	

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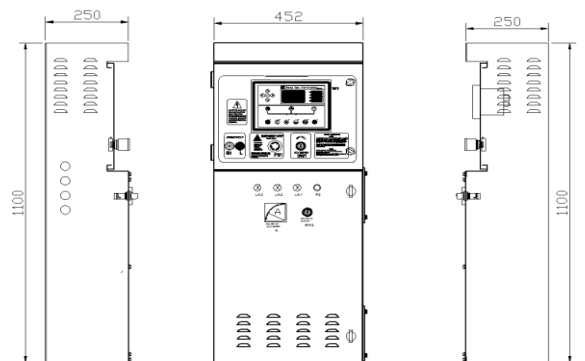
V500 GENSET CONTROL SYSTEM

- ◆ Genset Output Data Display and Protection
- ◆ Genset Status Display and Protection
- ◆ Genset Remote Start-up and Auto Start-up
- ◆ Power Monitoring System
- ◆ Fault LED Indicators
- ◆ Modular design and expandable

Deep Sea DSE7320 Genset Control System Features:

DSE 7320 controller features with multiple functions for Genset control, operation and protection. It provides logical control and Graphical LCD display, interfacing with RS232 and RS485 for local or remote applications. These features include:

- (1) Auto/Manual Start-Stop
- (2) Phase sequence detects and protection
- (3) 38*78 LCD display
- (4) Genset overspeed protection
- (5) Oil pressure display and protection
- (6) Coolant Temperature display and protection
- (7) DC Volt measurement and Over/Under Volt protect
- (8) Fuel Level detects and alarm
- (9) Lube Oil Timer
- (10) Electrical Measurement
 - a. Active Power
 - b. Reactive Power
 - c. Voltage(L-L/L-N)
 - d. Frequency
 - e. Line Currents
 - f. kWh
 - g. kVAh
- (11) Protections:
 - a. Over/Under Voltage
 - b. Over/Under Frequency
 - c. IDMT Over-current
- (12) LED Indicator for audio / visuals alarm
- (13) Hour-run meter
- (14) Over 200 Event Log
- (15) Including 1 x USB port for PC configuration



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VGS1700

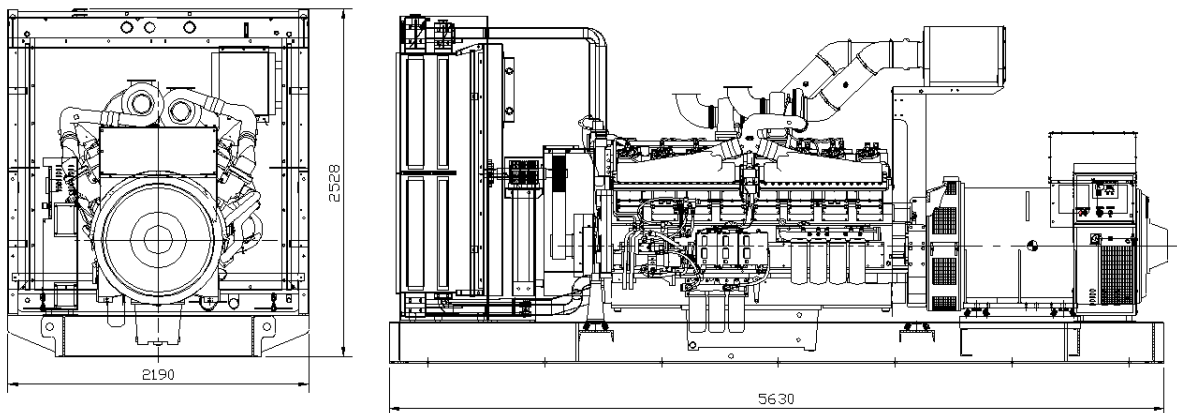
Open Type Generator Set

Rated Power (kWe/kVA)

Generator (Maker / Model)	Voltage	Prime Power Rating Output		
		kWe	kVA	AMPs
Leroy Somer LSA50.2VL10	380V	1232	1540	2340
	400V	1231	1539	2221
	415V	1232	1540	2143
Generator (Maker / Model)	Voltage	Standby Power Rating Output		
Leroy Somer LSA50.2VL10	380V	1372	1715	2606
	400V	1372	1715	2475
	415V	1372	1715	2386

* cos phi =0,8

Generator Set layout, Dimensions and Weight



Genset Model	Weight (kg)	Dimensions (LxWxH) mm
VGS1700	11000	5630 x 2190 x 2528

Optional Accessories

- ✘ Base frame fuel tank or separate fuel tank
- ✘ 50°C radiator for high amb. temp. (available for open type, standard for enclosure type)
- ✘ Automatic changeover switch (ATS)
- ✘ Deif, ComAp or other famous brand controller
- ✘ ABB, Schneider, Siemens or other famous brand circuit breakers
- ✘ Adjustable earth fault protection and earthing connection w/main CB
- ✘ Adjustable fuel level sensor
- ✘ Genset manual oil pump
- ✘ Genset fuel oil cooler
- ✘ Genset radiator heater/fuel oil heater/lub oil heater
- ✘ Genset automatic fuel supply system
- ✘ Genset anti-freeze heater
- ✘ Genset DE housing-RTD/thermistor/PT100
- ✘ Other genset accessory upon special request.

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