

# GMS500C/S

## EC Series



### Features:

- Rotate speed governor: Electirical governor FP801
- Excitation system: Self excited
- A.V.R model: AS440
- Emergency stop switch
- ATS (automatic transfer switch) receptacle
- 2x12V sealed for life maintenance free battery
- Lockable battery isolator switch
- Powder coated canopy (Only for Soundproofed sets)
- 50°C radiator
- Oil pump on the engine
- Steel base frame with fork holes
- Vibration isolators between the engine/alternator and base frame
- Dry type air filter
- Base fuel tank for daily running
- Drain points for fuel tank
- Operation Manual / Specifications



### Output Ratings

Generating Set Model	Prime Power	Standby Power
GMS500C	500kVA/400kW	575kVA/460kW
GMS500CS	500kVA/400kW	575kVA/460kW

Ratings at 0.8 power factor

### Dimensions and Weights

Model	Length (L) mm	Width (W) mm	Height (H) mm	Dry Weight kg
GMS500C	3384	1458	2193	4250
GMS500CS	4500	1550	2450	6215

#### Notes:

##### \*Prime Power

Continuous duty operation, under variable load 24/24h-10% over load permissible 1 hour/12 hours;

##### \*\*Standby Power

Standby duty, operation under variable load, without over load;

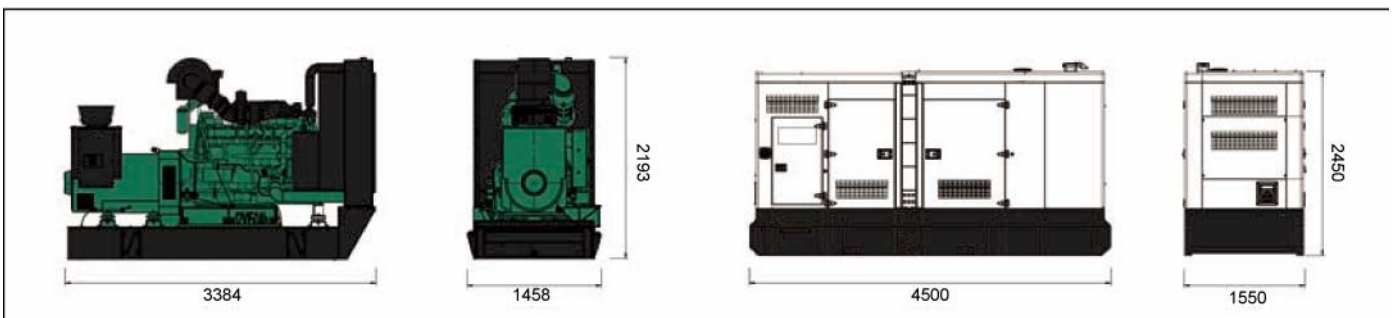
##### Standard Reference Conditions

Note: Standard reference conditions 25°C (77°F) Air Inlet Temp, 100m(328 ft) A.S.L. 30% relative humidity.

Fuel consumption data at full load with diesel fuel with specific gravity of 0.85 and conforming to BS2869: 1998, Class A2.

### Ratings and Performance Data

Engine Make & Model:	Cummins KTA19-G4
Alternator Brand:	Stamford
Alternator Model:	HCI544D
Control System:	Auto Gen / AMF
Circuit Breaker Type:	3 Pole MCCB
Frequency & Phase:	50Hz & 3PH
Engine Speed: RPM	1500
Fuel Tank Capacity: L	
GMS500C	940
GMS500CS	1020
Fuel Consumption: L (100% Load)	
- Prime Power	31.9
- Standby Power	28.4



## Engine model:KTA19-G4

Engine Technical Data	
No. of Cylinders / Alignment:	4 / In Line
Cycle:	6 Stroke
Bore / Stroke: mm	159(6.25)/159 (6.25)
Induction:	Turbocharged
Cooling Method:	Water
Governing Type:	Mechanical
Governing Class:	ISO 8528 G2
Compression Ratio:	145:1
Displacement: L	18.9
Moment of Inertia:kg.m <sup>2</sup>	7.2 (170)
Engine Electrical System:	
- Voltage / Ground	24/Negative
- Battery Charger	35
Weight: kg	1855
	- Dry
	- Wet

Cooling System	
Cooling System Capacity: L	30
Maximum coolant Friction Head External to Engine: kPa	55
Maximum Static Head of Coolant Above Engine Crank Centerline : m	18.3
Standard Thermostat (Modulating) Range: °C	82-93
Minimum Pressure Cap: kPa	69
Maximum Top Tank Temperature for Standby / prime Power: °C	104/100

Designed to operate in ambient conditions up to 50°C (122°F). Contact your local Multiphase Power Dealer for power ratings at specific site conditions

Performance	
Engine Speed: RPM	1500
Gross Engine Power: kWm	
-Prime	488(600)
- Standby	504 (675)
BMEP: kPa	
- Prime	1896 (275)
- Standby	2137 (310)

Fuel System				
Injection System Type: Direct Injection Cummins PT				
Recommended Fuel Type: Diesel Fuel No.2-D(ASTM D975)				
Fuel Consumption: l/hr				
Prime	110% Load	100% Load	75% Load	50% Load
GMS500C	31.9	28.4	21.6	14.9
GMS500CS	31.9	28.4	21.6	14.9

(Based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2)

Lubrication System	
Oil Pressure @ Idle Speed kPa	138
@ Rated Speed kPa	345-483
Maximum Oil Temperature: °C	121
Total Oil Capacity: L	50
Oil Type:	API CH4 / 15W-40

Exhaust System	
Silencer Type	Industrial
Silencer Quantity:	1
Silencer Noise Reduction Level:	15-20dBA
Maximum Allowable Back Pressure: mmhg	76
Exhaust Gas Flow: l/s	
- Prime	1463 (3100)
- Standby	1604 (3400)
Exhaust Gas Temperature: °C	
- Prime	538 (1000)
- Standby	557 (1034)

Air Systems	
Air Filter Type:	Dry type replaceable Element
Intake Air Flow: l/s	
- Prime	532
- Standby	579
Max. Air Intake Restriction:mmH <sub>2</sub> O	
-With Dirty Filter Element	635
-With Normal Duty and Clean Filter Element	254
-With Heavy Duty and Clean Filter Element	381

The weights are approximate and without fuel.

### Alternator model:HCI544D

Alternator Physical Data	
Manufactured by:	Stamford
Model:	HCI544D
No. of Bearings:	Single
Insulation Class:	H
Winding Pitch Code:	2/3
Wires:	12
Ingress Protection Rating:	IP23
Excitation System:	Self excited
AVR Model:	AS440

Alternator Operating Data	
Overspeed: rpm	2250rpm
Voltage Regulation: (Steady state)	±1.0%
Wave Form NEMA = TIF:	< 50
Wave Form IEC = THF:	< 2%
Air Flow: m <sup>3</sup> /s	1.035
Altitude: m	≤1000

Alternator Performance Data:	GMS500C	GMS500CS
<b>Time constants/400V:Ms</b>		
T'd	80	80
T''d	12	12
T'do	2200	2200
Ta	18	18
<b>Short Circuit Capacity** %</b>	1/Xd	1/Xd
<b>Reactances: Per Unit</b>		
Xd	2.72	2.72
X'd	0.14	0.14
X''d	0.10	0.10

Voltage Technical Data GMS500C				
Voltage	Prime:		Standby:	
	kVA	kW	kVA	kW
380/220	450	360	515	412
400/230	495	396	575	460
415/240	450	360	515	412
440/254	450	360	515	412

Voltage Technical Data GMS500CS				
Voltage	Prime:		Standby:	
	kVA	kW	kVA	kW
380/220	450	360	515	412
400/230	495	396	575	460
415/240	450	360	515	412
440/254	450	360	515	412

# ControlSystem

## PLC-7420

### FEATURES

- Microprocessor control, with high stability and credibility .
- Mains supply and generator operation monitoring.
- Indicating operation status and fault conditions.
- Multiple protections; multiple parameters display, such as pressure, temperature.
- Manual and automatic work mode selectable.
- Real time clock for time and date display, overall runtime display, 99 log entries
- Overall power output display.
- Integral speed/frequency detecting, telling status of start, rated operation, overspeed.
- Communication with PC via RS485 or RS232 interface, using MODBUS protocol.
- Engine ECU is available.
- Common USB cable is usable for parameter configuration.
- Multi-language is available.



## PLC-920 (Optional)

### FEATURES

- Parameter configuration via RS-232 serial communication;
- Log last 50 events & alarm information with measured values;
- Statistics records;
- Remote start/stop;
- Speed sensing from alternator voltage or magnetic pickup;
- Configurable 3 inputs and 6 outputs;
- ECU powers, ECU stop, STOP or fuel solenoid selection;
- Automatic transfer switching control and engine control;
- Adjustable start, load and stop timers.



Diesel Generator Sets 6-2250 kVA		PLC-7420	PLC-920	
General accessory	MODEL	●	●	
	AVR	●	●	
	Electronic Governing	×	×	
	Glow plug control	●	●	
	Cycle Cranking	●	●	
	(MODBUS) Networking	●	×	
	Fault History	●	●	
	Manual start/stop	●	●	
	Auto/remote start	●	●	
	Regular Test	●	●	
Operator Interface	Auto operation LED	●	●	
	Manual operation LED	●	●	
	Common Shutdown LED	●	●	
	Common warning LED	●	●	
	Fail to start LED	●	●	
	(Emergency stop)lock	●	●	
	Alphanumeric screen	●	●	
	Remote start input active LED	●	×	
	Alarm reset	●	●	
	Alarm reset	●	●	
Measurement and Instrumentation	Engine	Oil pressure	●	●
		Water Temperature	●	●
		Engine Speed	●	●
		Hours Run	●	●
		Number of Starts	●	●
	Alternator	Battery Voltage	●	●
		Coolant Temperature	●	●
		3Phase-L Voltage&Frequency	●	●
		3phase Current	●	●
		Frequency	●	●
		kWh	●	●
		Apparent Power	●	●
		Active Power and Reactive Power	●	●
		Power Factor	●	●
		Per PhasekW, kVAr	●	●
		Per Phase kVA	●	●
		Phase Voltage	●	●
		Output Power	●	×
		Grid Line Voltage	●	×
		Grid Phase Voltage	●	×
Grid Frequency	●	×		
Shutdown Protection and Indication	Engine	Low Fuel Level	●	●
		High Fuel Level	○	×
		Low Oil Pressure	●	●
		High Water Temperature	●	●
		Failure to Stop	●	●
	Alternator	Failure to Start	●	●
		Controlable start circles/times	●	×
		Overspeed	●	●
		Under&Over Voltage	●	●
		Under&Over Frequency	●	●
Threshold Warning&Indication	Engine	Overcurrent	●	●
		Earth Leakage	○	○
		Reverse Power	×	×
		Reverse kWh	×	×
		Low Oil Pressure	●	●
	Alternator	Low Water Temperature	○	○
		High Water Temperature	●	●
		Low Water Level	●	●
		Low/High Battery Voltage	●	●
		Failure to Charge	●	●
Paralleling Capability	Engine	Overcurrent	●	●
		Overload	●	●
		Genset Under/Over Voltage	●	●
		Genset Under/Over Frequency	●	●
		under/over Speed	●	●
	Alternator	High Engine Temperature	●	●
		Earth Leakage	○	○
		Synchroscope(Independent Bus)	×	×
		Active and Reactive Power Control	×	×
		Synchroscope(Shared Bus)	×	×
Power Transfer Function	Engine	Synchronization Detector	×	×
		Peak Lapping	×	×
		Automatic Transfer	●	○
		Hard Closed Transition	●	●
		Soft Closed Transition	×	×
	Alternator	Gen/Mains Breaker	●	×
		Gen/Mains Breaker Status Protection	●	×
		Speed/Voltage Control	×	×
		Power Indication	●	×
		Fuel&Solenoid Valve Control	●	●
Environment	Engine	Stator Control	●	●
		Preheating	○	○
		Mains Transfer Switch (Standard)	●	×
		Mains Transfer Switch (Emergency)	●	×
		Operating Temperature (-40℃-70℃)	●	●
	Alternator	Ambient Temperature (-25℃-45℃)	●	●
		Humidity<=80%	●	●
		Grid Over/Under Voltage Control	●	×
		Grid Over/Under Frequency Control	●	×
		Remote Start (Output/Load/No-load)	●	●
Monitoring Function	Engine	Optional Relay Output	●	●
		Remote Telecom Control with All Functions	●	×
		Engine Instrument Monitoring	●	●
		Alternator Output Instrument Monitoring	●	●
		Connection Point with All-around Setting For 6 Users	●	●
	Alternator	3 Users Input Connection Point	●	●
		LCD Light Control of Low Light Operation Environment	●	●
		Safe PIN Code	●	●
		RS232/485 Interface	●	×
		Language Selection	●	●
Multi-Language Function	●	●		

● Standard ○ Optional × Impossible

### Optional



Engine	Alternator	Generator Set	Fuel System	Canopy
<ul style="list-style-type: none"> <li>Water Jacket Preheater</li> <li>Oil Preheater</li> </ul>	<ul style="list-style-type: none"> <li>Winding Temperature</li> <li>Measuring Instrument</li> <li>Alternator Preheater</li> <li>PMG</li> <li>Anti-damp and anti-corrosion treatment</li> <li>Anti-condensation heater</li> </ul>	<ul style="list-style-type: none"> <li>Tools with the machine</li> </ul>	<ul style="list-style-type: none"> <li>Low fuel level alarm</li> <li>Automatic fuel feedingsystem</li> <li>Fuel T-valves</li> </ul>	<ul style="list-style-type: none"> <li>Weatherproof Canopy</li> </ul>
Lubricating System	Exhaust System	Cooling System	Control System	Voltages
<ul style="list-style-type: none"> <li>Oil with the machine</li> </ul>	<ul style="list-style-type: none"> <li>Protection board from hotness</li> </ul>	<ul style="list-style-type: none"> <li>Front heat protection</li> <li>Coolant (-30°C)</li> </ul>	<ul style="list-style-type: none"> <li>Remote control panel</li> <li>PLC-920</li> <li>ATS</li> </ul>	<ul style="list-style-type: none"> <li>415/240V</li> <li>400/230V</li> <li>380/220</li> <li>220/127V</li> <li>200-115V</li> </ul>

The following lists are optional by the needs of customers.

Minor Repair / 1000 hrs optional				
No.	Part Name	Part No.	Qty	Remark
1	CARTRIDGE,LUB	3889310=LF670	2	
2	ELEMENT,LUBOIL FILTER	3889311=LF777	1	
3	FILTER,FUEL	3315847=FF105D	2	
4	CORROSION RESISTOR	4058965=WF2076	1	
5	CLEANER, AIR	4095069=AF872	1	
6	BELT,V	3002202	1	IMPORT
7	BELT,V	206996	2	
8	SET,MAIN BEARING	AR12270	1	
9	BEARING,CONNECTING	205840	6	
10	NOZZLE,PISTION COOLING	3007517	6	
11	THERMOSTAT	3076489	2	
12	OIL PRESSURE TRANS DUCER	3015237	1	
13	SENSOR, WATER TEMP	3015238	1	IMPORT
14	SPEED SENSOR	3034572	1	
15	SWITCH,MAGNETIC	3050692	1	
16	SET,UPPER ENGINE GSK	3803598	1	IMPORT
17	SET,LOWER ENGINE GSK	3801007	1	IMPORT

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EC Series



If you have any question or inquiry, please contact Multiphase Power sales organization.

*Specification may change without prior notice.  
For more info, please contact Multiphase Power or your local distributors.*

EC Series / 2013 1st Edition

[www.multiphase-power.com](http://www.multiphase-power.com)

