

# GMS60C/S

## EC Series



### Features:

- Rotate speed governor: Electrical governor S6700E
- 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
<b>GMS60C</b>	60kVA/48kW	61kVA/48.8kW
<b>GMS60CS</b>	60kVA/48kW	61kVA/48.8kW

Ratings at 0.8 power factor

### Dimensions and Weights

Model	Length (L) mm	Width (W) mm	Height (H) mm	Dry Weight kg
<b>GMS60C</b>	1842	797	1437	918
<b>GMS60CS</b>	2650	1050	1550	1547

#### 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;

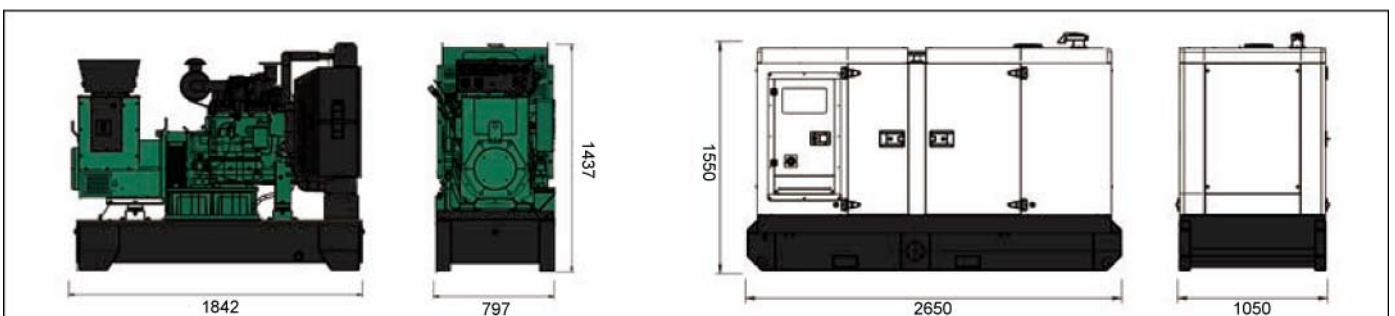
##### Standard Reference Conditions

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

<b>Engine Make &amp; Model:</b>	Cummins 4BTA3.9-G2
<b>Alternator Brand:</b>	Stamford
<b>Alternator Model:</b>	UCI224E
<b>Control System:</b>	Auto Gen / AMF
<b>Circuit Breaker Type:</b>	3 Pole MCCB
<b>Frequency &amp; Phase:</b>	50Hz & 3PH
<b>Engine Speed: RPM</b>	1500
<b>Fuel Tank Capacity: L</b>	
<b>GMS60C</b>	226
<b>GMS60CS</b>	240
<b>Fuel Consumption: l/hr (100% Load)</b>	
<b>- Prime Power</b>	13.1
<b>- Standby Power</b>	14.7



### Engine model:4BTA3.9-G2

Engine Technical Data	
No. of Cylinders / Alignment:	4 / In Line
Cycle:	4 Stroke
Bore / Stroke: mm	102/120
Induction:	Turbocharged
Cooling Method:	Water
Governing Type:	Mechanical
Governing Class:	ISO 8528 G2
Compression Ratio:	16.5:1
Displacement: L	3.9
Moment of Inertia:kg.m <sup>2</sup>	0.143
Engine Electrical System:	
- Voltage / Ground	12/Negative
- Battery Charger	63 Amp
Weight: kg	
- Dry	350
- Wet	

Cooling System	
Cooling System Capacity: L	7.9
Maximum coolant Friction Head External to Engine: kPa	28
Maximum Static Head of Coolant Above Engine Crank Centerline : m	14
Standard Thermostat (Modulating) Range: °C	82-95
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	50
- Standby	55
BMEP: kPa	
- Prime	
- Standby	

Fuel System				
Injection System Type: NYC A pump with GAC governor				
Recommended Fuel Type: Diesel Fuel No.2-D(ASTMD975)				
Fuel Consumption: l/hr				
Prime	110% Load	100% Load	75% Load	50% Load
GMS60C	14.7	13.1	9.8	6.7
GMS60CS	14.7	13.1	9.8	6.7

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

Lubrication System	
Oil Pressure @ Idle Speed kPa	207
@ Rated Speed kPa	345
Maximum Oil Temperature: °C	121
Total Oil Capacity: L	10.9
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	130
- Standby	155
Exhaust Gas Temperature: °C	
- Prime	460
- Standby	485

Air Systems	
Air Filter Type:	Dry type replaceable Element
Intake Air Flow: l/s	
- Prime	32.8
- Standby	32.9
Max. Air Intake Restriction: mmH <sub>2</sub> O	
-With Dirty Filter Element	508
-With Normal Duty and Clean Filter Element	254
-With Heavy Duty and Clean Filter Element	305

### Alternator model:UCI224E

Alternator Physical Data	
Manufactured by:	Stamford
Model:	UCI224E
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	0.1
Altitude: m	≤1000

Alternator Performance Data:	GMS60C	GMS60CS	
Time constants/400V:Ms	T'd	28	28
	T''d	7	7
	T'do	700	700
	Ta	6	6
Short Circuit Capacity** %	701Xd	1Xd	
Reactances: Per Unit	Xd	2.24	2.24
	X'd	0.17	0.17
	X''d	0.12	0.12

Voltage Technical Data GMS60C				
Voltage	Prime:		Standby:	
	kVA	kW	kVA	kW
380/220	53.0	42.4	61.0	48.8
400/230	53.0	42.4	61.0	48.8
415/240	53.0	42.4	61.0	48.8
440/254	40.3	32.2	45.8	36.6

Voltage Technical Data GMS60CS				
Voltage	Prime:		Standby:	
	kVA	kW	kVA	kW
380/220	53.0	42.4	61.0	48.8
400/230	53.0	42.4	61.0	48.8
415/240	53.0	42.4	61.0	48.8
440/254	40.3	32.2	45.8	36.6

# ControlSystem

## PLC-7420 (Optional)

### 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

### 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				
	MODEL	PLC-7420	PLC-920	
General accessory	AVR	●	●	
	Electronic Governing	×	×	
	Glow plug control	●	●	
	Cycle Cranking	●	●	
	(MODBUS) Networking	●	×	
Operator Interface	Fault History	●	●	
	Manual start/stop	●	●	
	Auto/remote start	●	●	
	Regular Test	●	●	
	Auto operation LED	●	●	
	Manual operation LED	●	●	
	Common Shutdown LED	●	●	
	Common warning LED	●	●	
	Fail to start LED	●	●	
	(Emergency stop/local)	●	●	
Measurement and Instrumentation	Alphanumeric screen	●	●	
	Remote start input active LED	●	×	
	Alarm reset	●	●	
	Engine	Oil pressure	●	●
		Water Temperature	●	●
		Engine Speed	●	●
		Hours Run	●	●
		Number of Starts	●	●
	Alternator	Battery Voltage	●	●
		Coolant Temperature	●	●
3Phase L-L Voltage&Frequency		●	●	
3phase Current		●	●	
Frequency		●	●	
Main Expression	kWh	●	●	
	Apparent Power	●	●	
	Active Power and Reactive Power	●	●	
	Power Factor	●	●	
	Per PhasekW, kW	●	●	
Shutdown Protection and Indication	Per Phase kVA	●	●	
	Phase Voltage	●	●	
	Output Power	●	×	
	Grid Line Voltage	●	×	
	Grid Phase Voltage	●	×	
	Grid Frequency	●	×	
	Threshold Warning/Indication	Low Fuel Level	●	●
		High Fuel Level	○	×
		Low Oil Pressure	●	●
		High Water Temperature	●	●
Failure to Stop		●	●	
Failure to Start		●	●	
Controllable start circles/times		●	×	
Overspeed		●	●	
Under/Over Voltage		●	●	
Under/Over Frequency		●	●	
Paralleling Capability	Overcurrent	●	●	
	Earth Leakage	○	○	
	Reverse Power	×	×	
	Reverse kW	×	×	
	Low Oil Pressure	●	●	
	Low Water Temperature	○	○	
	High Water Temperature	●	●	
	Low Water Level	●	●	
	Low/High Battery Voltage	●	●	
	Failure to Charge	●	●	
Power Transfer Function	Overcurrent	●	●	
	Overload	●	●	
	Genset Under/Over Voltage	●	●	
	Genset Under/Over Frequency	●	●	
	Under/over Speed	●	●	
	High Engine Temperature	●	●	
	Earth Leakage	○	○	
	Synchronscop(Independent Bus)	×	×	
	Active and Reactive Power Control	×	×	
	Synchronscop(Shared Bus)	×	×	
Environment	Synchronization Detector	×	×	
	Peak Lapping	×	×	
	Automatic Transfer	●	○	
	Hard Closed Transition	●	○	
	Soft Closed Transition	×	×	
	Gen/Main Breaker	●	×	
	Gen/Main Breaker Status Protection	●	×	
	Speed/Voltage Control	×	×	
	Power Indication	●	×	
	Fuel&Solenoid Valve Control	●	●	
Monitoring Function	Starter Control	●	●	
	Preheating	○	○	
	Main Transfer Switch (Standard)	●	×	
	Main Transfer Switch (Emergency)	●	×	
	Operating Temperature (-40℃~70℃)	●	●	
	Ambient Temperature (-25℃~45℃)	●	●	
	Humidity ≤ 80%	●	●	
	Grid Over/Under Voltage Control	●	×	
	Grid Over/Under Frequency Control	●	×	
	Remote Start Output(Load/No-load)	●	●	
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	●	●		
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>Trailer</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-7420</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.

### 4B Series 1000 Hour Maintaining List

No.	Part Name	Part No.	Qty	Remark
1	CARTRIDGE, LUB	1012Q-010(3908616)	5	
2	FILTER, FUEL	C3931063	5	
3	WATER FUEL SEPERATOR	C3930942	5	
4	CLEANER, AIR	kw1524	5	
5	BELT, V RIBBED	C3288790	2	
6	FRONT FUEL SEAL	C4991305	1	
7	REAR FUEL SEAL	C4982415	1	
8	BEARING, CRANKSHAFT THRUS	A3906230	1	
9	BEARING, MAIN, UPPER	C3929016	4	
10	BEARING, MAIN, BOTTOM	C3929021	5	
11	BEARING, CONNECTING ROD	A3901170	8	
12	GASKET, VALVE COVER	C3930906	8	
13	GASKET, SYLINDER	3921393.00	1	
14	AIR RING, PISTON	3918315.00	4	ONE SET
15	MID RING, PISTON	3904531.00	4	
16	OIL RING, PISTON	3932520.00	4	
17	NOZZLE TIP	P277	8	
18	SOLENOID, FUEL PUMP	C4942879	1	
19	PUMP SET	C3911118	1	

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EC Series



If you have any question or inquiry, please contact Multiphase Power sales organization. Or contact by: 02-168-3193-5

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

EC Series / 2017 1st Edition

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

Local Distributor