



STRONG

Genmac provides one-source responsibility for the generating system and accessories.

- All units and components are prototype tested, factory build and production tested. A specific control procedure during the several stages of production ensures long life and reliability.
- Rugged 4 cycle heavy-duty Industrial diesel engine, of primary brands with direct fuel injection system and swirl intake ports combine for a low fuel consumption and excellent transient response.
- Powerful alternators with insulation system of H class and impregnation made with tropicalized epoxy resins, are used as standard.
- Generator set accepts one-step 100% of full load.
- The variation of the Voltage is maintained between + -1% by sophisticated Electronic Voltage Regulators.
- Fully programmable Autostart controller is supplied with auto start control system and digital instrumentation. Automatic device for setting the periodic exercise is integrated.
- Heavy-duty built-in anti-vibration insulators assures lower noise and longer components life.
- Protection guards on rotating parts
- Four lifting brackets are supplied on the base frame
- The Silent version consist of a weather-proof bolted modular pre-painted enclosure (2000/14/CE compliant) with hinged lockable doors, radiator coolant hatch, base mounted radiator coolant and engine oil drain lines. These items affords superior flexibility and ease of maintenance.
- A stub-up area is provided to make easier the electrical connection to the load.
- A wide range of accessories is provided on request in order to satisfy the needs of the user and to let the generator work in almost every condition.

**RATINGS**

Model	Voltage	Phase	Hz	Power Factor	Standby KW	Standby KVA	Standby Amps	Prime KW	Prime KVA	Prime Amps	Starting KVA
G40C	400/230	3	50	0.8	35	44	64	32	40	58	N/A

**RATING DEFINITION**

**Standby Rating:** Applicable for supplying emergency power for the duration of normal power interruption limited to maximum 500h per year within the following maximum operating time: 100% load 25h per year, 90% load 200h per year.

No overload capability is permitted for this rating. "Limited Time running Power (LTP)" rating conforms to ISO 8528-1.

**Prime Rating:** Applicable for supplying power at a variable load for an unlimited number of hours per year. A 10% overload capability is available for one hour in twelve hours periods. This rating conforms to ISO 8528-1 "Prime Running Power (PRP)".

**STANDARD REFERENCE CONDITIONS:**

The above mentioned power data are calculated with: air temperature of 25°C (77°F); 99kPa of barometric pressure, 100m of altitude a.s.l and 30% of relative humidity. For different conditions please refer to the derating factor's table specific for this engine.

**INSTALLATION AND APPLICATION DATA**

	Units	50 Hz		60 Hz	
		PRP	LTP	PRP	LTP
<b>General</b>	Emission certificates	NOT CERTIFICATED			
	Noise level (silent version)	dB(a) 7mt	69		
	Rated Speed	rpm	1500		
<b>Engine basic data</b>	Engine Brand - Model	Cummins – S3.8 G4			
	Gross Engine Output	hp (KW)	51.9 (38.7)	58.2 (43.4)	
	Number and arrangement of cylinders	4 vertical in-line			
	Type of air intake	Turbocharged			
	Type of cooling	Water-cooled			
	Total displacement	liters (cu. In.)	3.8 (232)		
	Bore x Stroke	mm (in.)	97(3.8) x 128 (5)		
	Speed control	Mechanical			
	Speed drop	+ - 5%			
<b>Fuel system</b>	Type of fuel	Diesel			
	Maximum Fuel Transfer Pump Lift-	m(ft)	0.9 (3)		
	Fuel consumption @ 25% load	Liters/h (gal/h)	3,5 (0,9)	N/A	
	Fuel consumption @ 50% load	Liters/h (gal/h)	5,4 (1,4)	N/A	
	Fuel consumption @ 75% load	Liters/h (gal/h)	7,6 (2,0)	N/A	
	Fuel consumption @ 100% load	Liters/h (gal/h)	9,9 (2,6)	11,2 (3,0)	
	Standard fuel tank capacity (silent)	Liters (gal)	70 (18.5)		
<b>Oil</b>	Autonomy @75% load (silent)	Hours	9,3		
	Type of oil (for usage at std reference conditions)	15W40 to API CG4			
	Total Quantity of oil (including filters)	Liters (qt. )	11 (2.9)		
<b>Coolant</b>	Maximum Oil consumption	N/A			
	Type of coolant	Glicole Mixture 50% Antifreeze – 50% demineralized water			
<b>Air system</b>	Total quantity of coolant	Liters (qt)	11 (2.9)		
	Air filter type	Dry Element			
	Max. perm. intake vacuum	kPa (in.H <sub>2</sub> O)	N/A		
<b>Exhaust system</b>	Combustion air flow	m <sup>3</sup> /min (cf/min)	N/A	N/A	N/A
	Exhaust flow	m <sup>3</sup> /min (cf/min)	N/A	N/A	N/A
	Max. permissible exhaust backpressure	kPa	N/A		
<b>Electrical system</b>	Outlet size diameter	mm (in.)	50 (1,88)		
	Voltage of electric system	V	12		
	Starter motor capacity	A	N/A		
<b>Alternator</b>	Type of battery	Lead acid type			
	Number of poles	4			
	Number of bearings	1			
	Excitation	Self excited			
	Type of regulation	Automatic Voltage Regulation			
	Regulator model	DSR			
Voltage accuracy	±1 % with any power factor and speed variations between -5% +30%				

## STANDARD EQUIPMENTS

### ENGINE

- Air Cleaner (Dry-cartridge type)
- Fuel Pump
- Fuel Filter
- Fuel stop solenoid
- Thermostat and Housing
- Dry Exhaust Manifold
- Blower Fan & Fan Drive
- Radiator - Unit Mounted
- Electric Starting Motor
- Housing & Flywheel
- Charging Alternator
- Battery Rack & Cables
- First filling of oil and filters \*
- First filling of coolant \*
- Oil draining mechanical pump
- Coolant drain with tap

\* unless differently stated by selected means of transport

### GENERATOR

- Self-ventilated and drip-proof construction
- Synchronous, Brush-less, Self Exciting , Self Regulating
- Direct Coupled With Flex Disk
- 12 Leads winding
- Class H Insulation
- Drip-Proof Construction
- Humidity Tropical Protection
- Radio Interference Suppressor EMC Filter

### EXHAUST

- Built-in Residential Muffler
- Rain Cap

### HANDLING

- Lifting and holding down points

### BASE FRAME

- Heavy duty fabricated welded base plate with high quality steel.
- Heavy duty rubber anti-vibration mountings
- Integrated fuel tank with drain plug and low fuel alarm
- Stub-up area

### PHYSICAL DATA

	Units	Strong G40CSM
Length	mm (in.)	2250 (88.6)
Width	mm (in.)	960 (37.8)
Height	mm (in.)	1038 (40.9)
Weight	Kg (lbs)	1247 (2749)

### ELECTRICAL SYSTEM

- **Battery (for 50Hz is supplied as standard, for 60Hz is to be ordered separately)**
- Battery rack and cables
- Engine driven battery charger

### CANOPY (for silent units)

- Nylon hinges
- Heavy duty lockable handles in each door
- Num 3 large doors for easy access for service and monitoring
- Coolant refilling specific hatch
- Fireproof sound foam, self extinguishing compliant with class 1.
- Modular bolted assembly after painting.
- Grey RAL 7035 "orange peel" specific powder coat paint for outdoor usage
- Weatherproof sealed joints.
- Cut using high precision laser technology.
- Bent using high precision numeric control technology.
- Glazed acoustic sealed control panel door.
- Fuel filler outside enclosure.
- In base oil and coolant drains

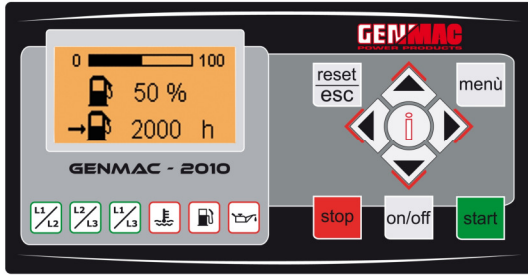
### CONTROL PANEL (see specific section below)

- Autostart controller C-2010
- Three phase sensing for voltage and currents
- **Circuit breaker (for 50Hz-230/400V is supplied as standard, for other voltages is to be ordered separately)**
- Emergency stop button
- External ATS connection board
- EC Conformity in compliance with EN 60439-1
- Electronic Battery charger **(for 60Hz versions is supplied as standard, for 50 Hz versions is to be ordered separately)**

### PACKAGING

- Carton box
- Alternator, Engine and Generating set operator's manual are supplied together with electrical drawings

## CONTROL PANEL



### CIRCUIT BREAKER

50Hz – 400V generators are supplied together with a circuit breaker that permits a thermal protection against overloads and magnetic protection against short-circuit.

For 60Hz or 50Hz-230V versions the circuit breaker has to be ordered separately indicating the voltage at which the generator has to work. All the generator of this line are fully re-connectable according to the specification indicated in the "RATINGS BOOK"

### QUICK CONNECTOR FOR REMOTE START

A 10 pin terminal board is supplied in order to connect easily the generator to an external device for remote start and stop.

### AUXILIARY SOCKETS (For 50Hz versions only)

A special box with 1 three phase 400V 63A socket, 1 three phase 400V 32A socket and 1 single phase 230V 16A socket is supplied in order to ease the fast connection between the generator and the electrical line or between the generator and the loads.

### TERMINAL BOARD (For 60Hz versions)

An internal terminal board with blocks is provided to make easier the connection from the load to the generator output.

### COMMANDER C-2010

Auto-start controller C-2010 it is used to command and control manually the generators. The remote start/stop function offers a greater versatility of application of the generator. Besides the simplicity of use, the display allows to receive every information necessary for a fast monitoring of the functioning state of the generator.

- > Very easy to use: On/Off to turn-on and turn-off START and STOP buttons
- > Compact, elegant and functional design
- > Simple keyboard with 5 buttons for an easy navigation
- > Clear display 128x64 pixel, backlighted and multilanguage (Russian included)
- > 3 leds to indicate immediately the presence or lacking of the phases
- > 3 leds for an immediate indication of the main alarms: oil, temperature and fuel
- > 3 instruments for engine measures programmable for any type of sensor and for different unite of measure (Optional)
- > 26 measures available on the display
- > Measures uncertainty < 1%
- > 33 generator alarms
- > Events log
- > Engine periodic service indication
- > Battery periodic service indication
- > Isolation between phases and ground > 1 Mohm, to be used on ships.
- > Remote start and stop with programmable start trials
- > Timer start/stop for programmed work cycles
- > Multicontroller connection via RS485
- > 3 outputs for alarms report, to connect to the alarms report box (RA2010)
- > Output to command the genset transfer switch
- > 1 RS232 output for programming or GSM module connection - 1 RS485 output
- > GSM communication to send commands or receive information on 2 different numbers (with GSM modem kit to be ordered separately)
- > Direct information of the autonomy time

#### Display Information

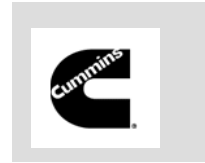
- > Voltage L1-L2 [Vac] - L2-L3 [Vac] - L3-L1 [Vac]
- > Voltage L1/N-L2/N-L3/N
- > Buffer charge voltage [Vdc]
- > Current L1 [A] - L2 [A] - L3 [A]
- > Frequency [Hz]
- > Cosj [0,00 ÷ 1,00]
- > Active power [kW]
- > Reactive power [kVAR]
- > Apparent power [kVA]
- > kWh
- > Oil pressure [bar-psi] (Optional)
- > Engine temperature [°C-°F] (Optional)
- > Fuel level [Litres-Gallons] (Optional)
- > Work autonomy [h]
- > Work hours
- > Daily work hours
- > Partial work hours in automatic mode
- > Partial work hours of a programmed start
- > Time to service
- > Warranty expiry
- > Time to battery service
- > Alarm type + icon

#### Technical data

- > Protection IP65
- > Working temperature -20°C + 70°C
- > Stacking temperature -30°C + 80°C
- > Range Vdc 8..35
- > Range Vac 50..500
- > Range Hz 50..60
- > Display 128x64 pixel, 62x33 mm
- > Reference EN61010

#### Alarms

- > Emergency stop
- > Warranty expired
- > Service
- > Rental hours expired
- > Battery maintenance
- > Charger alternator failure
- > Programmable alarm
- > Stop engine failure
- > Generator block
- > First service
- > Faulty oil pressure digital
- > Chance of fuel leakage
- > Start failed
- > Mechanical fault
- > Temperature prealarm (analogic-Optional)
- > High engine temperature (analogic-Optional)
- > High engine temperature (digital)
- > Fuel prealarm Analogic sensor (Optional)
- > Low fuel level Analogic sensor (Optional)
- > Low fuel level Digital sensor
- > Oil pressure prealarm Analogic sensor (Optional)
- > Low oil pressure Analogic sensor (Optional)
- > Low oil pressure Digital sensor
- > High battery voltage
- > Low battery voltage
- > Autonomy low
- > Generator low frequency
- > Generator high frequency
- > Generator low voltage
- > Generator high voltage
- > Generator wrong phase sequence
- > Generator current overload
- > Generator short-circuit current



## OPTIONAL EQUIPMENTS

A wide range of optional equipments are available to satisfy all the needs of the installer. Please contact GenMac's sales department for full details of these and other options

### ENGINE

- Starting aids (glow plugs-coolant heaters-oil heaters ..)
- Double-stage fuel filters

### GENERATOR

- Thermal protections
- Anti-condensation heaters
- Special treatment for usage in marine environmental conditions
- Oversized alternator for single phase connection

### EXHAUST

- Exhaust adapters
- Extension exhaust hose
- Silenced exhaust terminals

### BASE FRAME

- Automatic Refuelling kit from external tank with electric pump and electric valve.
- Sub base frames with bigger skid mounted fuel tanks
- External Storage Tanks
- Double wall UL compliant fuel tanks

### ELECTRICAL SYSTEM AND CONTROL PANEL

- Auxiliary sockets and plugs
- Fuel level gauge
- Oil pressure meter
- Water temperature meter
- Generator Monitoring/Remote control of complete system (with analog, GSM or Ethernet connection)
- Automatic Mains Failure Controllers
- Automatic Transfer Switches

### HANDLING AND CANOPY

- Central lifting hook
- Drip Tray
- Slow drive trailers

### MAINTENANCE

- Consumable Filters and spares for each maintenance interval

## WARNINGS

- Access to control panel and doors on both sides for inspection and maintenance is required.
- Adequate ventilation on both sides is required.

## WARRANTY

Please refer to Genmac for warranty policy described into WG001 module.

All Specifications and Materials are subject to change without prior notice.



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