

# POWERTEC Generator Set

## Powered by Yuchai YC12VC2070-D31 Engine

Model: PYC1690B    Prime Power: 1200KW/1500KVA    Standby Power: 1350KW/1690KVA

### Genset Fundamental Characteristics

- ◆ 230/400VAC, 50HZ 0.8PF 3 Phases, 4 wires output
- ◆ Frequency drop  $\leq 3\%$
- ◆ Voltage modulation  $\leq 0.3\%$
- ◆ The steady state frequency  $\leq 0.5\%$
- ◆ The steady state voltage deviation  $\leq \pm 1\%$
- ◆ The transient frequency deviation  $\leq +10\% \leq -15\%$
- ◆ The transient voltage deviation  $\leq +20\% \leq -15\%$
- ◆ Frequency recovery time  $\leq 3S$
- ◆ Voltage recovery time  $\leq 1S(\text{Voltage} \pm 3\%)$
- ◆ THF (Telephone Harmonic Factor)  $< 3$
- ◆ TIF (Telephone Influence Factor)  $< 50$
- Comply to Standard NEMA MG1-22.43
- ◆ Standard equipped with ambient temperature 40°C  
Connecting radiator
- ◆ Inbuilt shock absorber has high performance on shock absorption.  
It's easy to be transported and installed without embedding and  
Fixing rubber shock pad between the genset and ground

### Genset Standard Configuration

- ◆ Guangxi Yuchai Engine
- ◆ Brushless synchronous alternator
- ◆ POWERTEC intelligent controller
- ◆ 40°C standard ambient temperature  
Water radiator
- ◆ Modularized case circuit breaker (3P)
- ◆ Float Battery Charger
- ◆ Battery connect wire
- ◆ Steel base frame(include shock absorbers )
- ◆ Bottom oil tank
- ◆ Bellows、exhaust bend
- ◆ Manual book and files

### Genset Optional Configuration

- ◆ 24V Starter Batteries
- ◆ Daily Fuel Tank
- ◆ Oil-water separator
- ◆ Warning function of low water level, low fuel oil
- ◆ Automatically monitoring & controlling system of  
City power
- ◆ Coolant heater
- ◆ Oil heater
- ◆ Heat exchanger--Water cooling Tower System
- ◆ Soundproof Canopy/ Trailer
- ◆ ISO container
- ◆ Design and construction of environmental protection  
Engineering for the Genset room



## Performance Description of Diesel Engine

- ◆ Model: **Yuchai YC12VC2070-D31**
- ◆ Construction: High strength cylinder block, alloy forged steel crankshaft, alloy steel connecting rod and internal cooling oil pipe piston make the engine more durable.
- ◆ Intake: Turbo charged/ Intercooler
- ◆ Four valves + pressurized intercooling technology, sufficient air intake, full combustion and low fuel consumption.
- ◆ Electronic controlled monomer pump is adopted, operation smoothly, has good speed regulation and strong loading capacity.
- ◆ The machine body use high strength material, arc stiffener mesh structure, 4-bolt main bearing structure, has high stiffness, low vibration and low noise.
- ◆ The crankshaft is made with good quality alloy steel and extruded with all fiber, heated by shaft diameter and fillet quenching., which is wear resistant and has long service life.
- ◆ With world class equipment and production technology, the engine is stable and reliable.
- ◆ Support dual energy start up
- ◆ One cylinder and one lid structure, with maintenance window on the side of the machine body for easy maintenance.
- ◆ Meeting T3 emission standards for non road countries
- ◆ YC12VC series engine is a classic product developed by Yuchai. It has the advantages of energy saving, environmental protection, excellent performance, compact structure, reliable and durable, and the emission of pollutants, power, economy and reliability index have reached the international advanced level.
- ◆ Engine Operating Environment Description:  
The engine can work under the following conditions without modulating power:  
1800r/min engine--altitude less than 1000 m, ambient temperature less than 40 °C  
1500r/min engine--altitude less than 1000 m, ambient temperature less than 40 °C

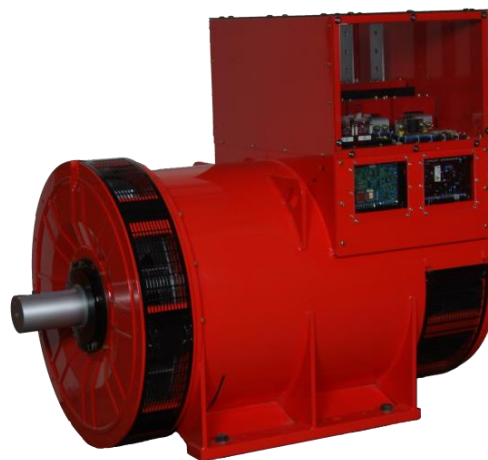


## Performance Description Alternator

- ◆ Optional Alternator: **Stamford / Marathon/ Faraday/Engga/Mecc Alt**
- ◆ Brushless, 4 pole rotating magnetic field, single bearing with protective cove
- ◆ Insulation: H Class.
- ◆ Standard IP23 grade
- ◆ Cooling system
- ◆ AC exciter, rotate rectifying unit
- ◆ Surface of stator winding is covered with damp-proof epoxy Insulation varnish after impregnation proceeding
- ◆ Rotor and exciter is proceeded with high temperature insulating resin, Will be more applicable for harsh environment.
- ◆ Rotor dynamic balancing comply to standard BS5625, class 2.5
- ◆ Sealed with advanced lubricating grease prolongs life of bearing.

**Notes: Above data of alternator comes from Stamford. Proper**

**specification is subject to the practice alternator if customers choose other alternator**



## Standard Detection Function

- ◆ 3 phases voltage Ua,Ub,Uc
- ◆ Frequency F1
- ◆ Apparent power PR
- ◆ Coolant temperature WT
- ◆ Oil pressure OP
- ◆ Speed RPM
- ◆ HC timer 99999 hours records
- ◆ Maximum cumulative times of starting can reach 999999
- ◆ 3 phases current La,Lb,Lc
- ◆ Active power PA
- ◆ Power factor PF
- ◆ Temperature °C display
- ◆ KPa/Psi/Bar display
- ◆ Battery voltage V



## Standard Protection Function

### Genset Protection

- ◆ Programmable alarm and status input
- ◆ Emergency stop

### Engine Protection

- ◆ Stop for over speed
- ◆ Alarm/Stop for low oil pressure
- ◆ Alarm/Stop for coolant high temperature
- ◆ Stop for failure to start/jigger
- ◆ Indication of sensor fault
- ◆ Alarm for low/high battery voltage
- ◆ Alarm for shortage of battery

### Alternator Protection

- ◆ Stop for over high/low voltage
- ◆ Alarm/stop for over current
- ◆ Stop for loss of voltage detection signal
- ◆ Stop for over frequency
- ◆ Stop for low frequency

### Control System Components

- ◆ Control switch—manual/auto/stop/start
- ◆ Screen menu selection button
- ◆ Setting button
- ◆ Fault status indicators
- ◆ Emergency stop button
- ◆ Digital display



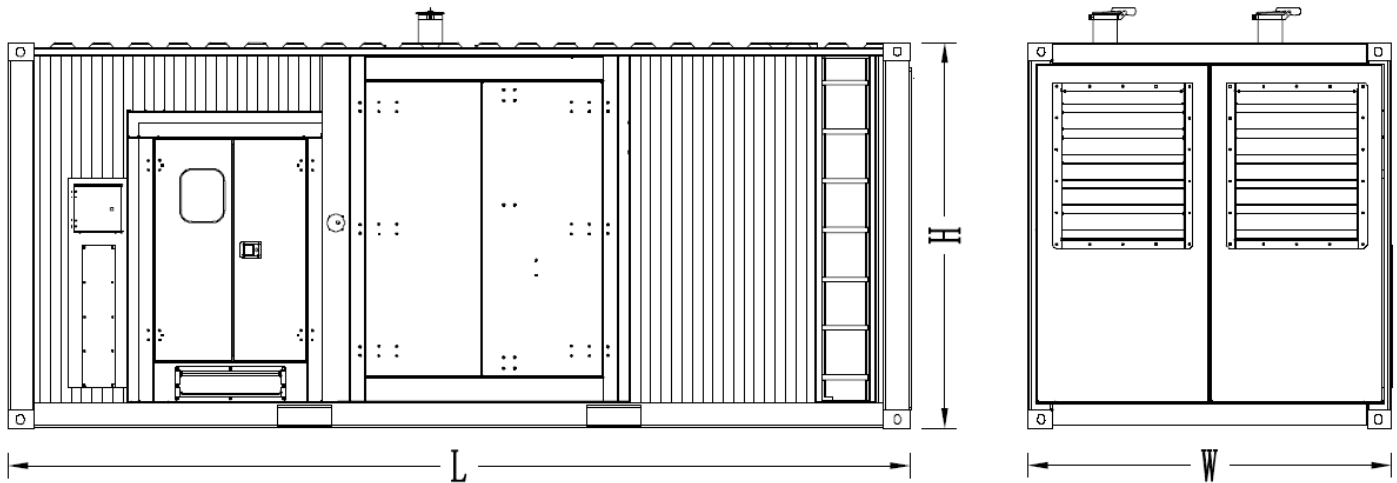
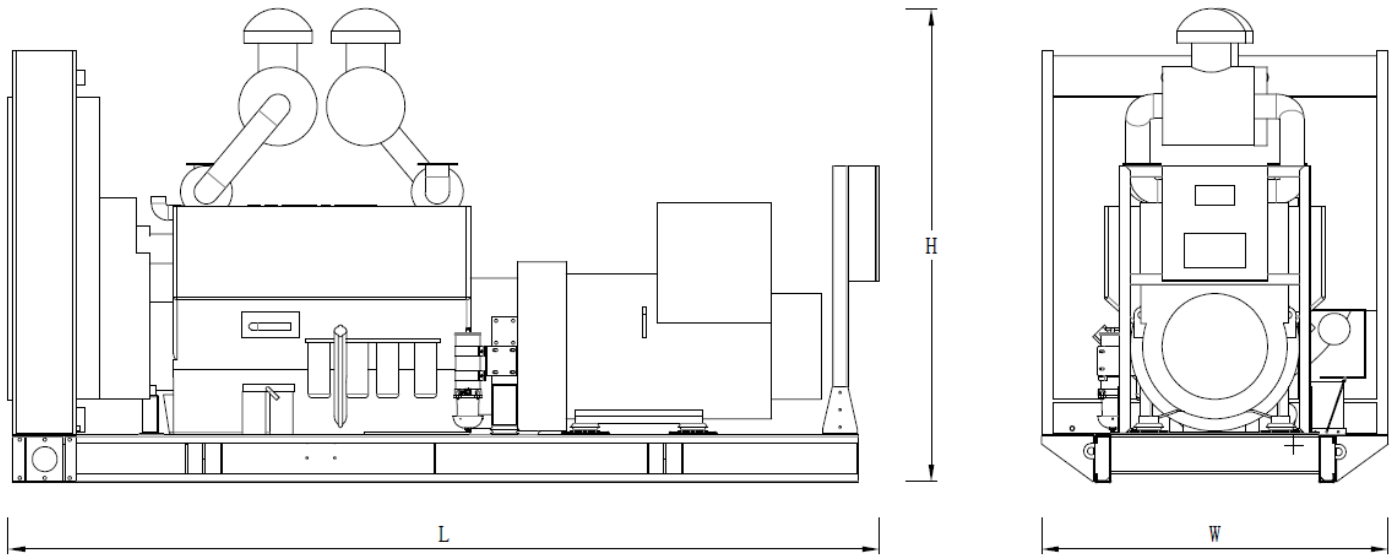
## Communication Interface

(optional function)

- ◆ International standard MODBUS communication protocol with error detection as well as RS232/ RS485 (RS485 is opto-isolated type) has functions of remote control, telemetry and telesignalling, which are facilitate to monitor genset.

**Notes: Above data of controller comes from POWERTEC GC7110.2 Proper specification is subject to customers' practice controller if other controller is selected.**

Genset	Model	PYC1690B
	Prime Rating (kw)	1200
	Standby Rating (kw)	1350
	Prime current(A)	2165
	Frequency(hz)	50
Engine & Alternator	Engine Model	YC12VC2070-D31
	Gross Engine output-Prime (kw)	1380
	Gross Engine output-Standby (kw)	1520
	Bore * stroke (mm)	200*210
	Cylinders and structure	12 V type
	Displacement(Liter)	79.17
	Compression Ratio	13.5: 1
	Intake way	Turbocharged/ Water-Air intercooler
	Max intake resistance (KPa)	5
	Air intake (m3/h)	7320
	Max exhaust back pressure (KPa)	10
	Exhaust gas flow (m3/h)	16650
	Exhaust temp (°C)	550
	Cooling way	Water Radiator & Fan
	Fan exhaust flow (m3/min)	1990
	Coolant capacity (L)	300
	Highest water temperature(°C)	102
	Minimum air opening to room (m2)	9.0/8.1
	Thermostat range (°C)	75-85
	Max oil temperature (°C)	110
	Lubrication system oil capacity (L)	315
	Fuel consumption(L/H)	324.1
	Standard Governor/Class	Electronic control
	Optional Alternator Model	Marathon--- MX-1350-4 Engga----- EG450-1350N Stamford---- PI 734D Faraday----- FD7C1-4
	Rated Voltage(V)	400/230
	Output Way	3 Phases, 4 wires
	Rated power factor	0.8
	Exciter	Brushless, Self-exciter
	Max voltage regulation	±1%
	Phase	3
Protection class	IP21-23	
Insulation class	H	
Controller	Brand and Model	POWERTEC GC7110.2



Type	Dimension mm (L*W*H)	Weight KG	Fuel Tank Capacity L
Open Type	5846*2320*2714	12800	-
Silent Type	12192*2438*2896	19600	2000

Notes: Above data are for reference only. Specific size is subjected to actual measurement.

## Contact Way

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