

# POWERTEC Generator Set

## Powered by Perkins 4006-23TAG2A Engine

Model: PPE825    Prime Power: 600KW/750KVA    Standby Power: 660KW/825KVA

### 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  $\leq 1S(Voltage \pm 3\%)$
- ◆ 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

- ◆ Perkins 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 )
- ◆ 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: **Perkins 4006-23TAG2A**
- ◆ Construction: Equipping with independent four valves cylinder head to facilitate air flow. The single fuel injector ensures ultra atomization of diesel fuel and combust at high speed under full control. Sharing a large number of components with other 4000 series engines helps to reduce the inventory of the manufacture.
- ◆ Intake: Turbocharged
- ◆ Fuel system: Digital governor with isochronous function, speed is Adjustable to ISO8528-5 standard; direct injection system with lift pump
- ◆ Lubrication system: Wet all aluminum oil pan with oil injector and oil dip stick
- ◆ Cooling system: Double thermostat, water pump; radiator equipped with built-in air for air pressurized intercooler (independent supply)
- ◆ Filtration system: Embedded air filter and turbocharger; rotary full-flow fuel filter; rotary full-flow oil filter
- ◆ Electrical equipment: 24V starter and 24V alternator, built-in regulator (DC output); turbine inlet high temperature protection switch; coolant high temperature protection switch; low oil pressure protection switch
- ◆ Lower operating cost: The standard replacement oil interval is set to 500 hours
- ◆ 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  $U_a, U_b, U_c$
- ◆ Frequency  $F_1$
- ◆ 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  $I_a, I_b, I_c$
- ◆ Active power  $PA$
- ◆ Power factor  $PF$
- ◆ Temperature  $^{\circ}C$  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



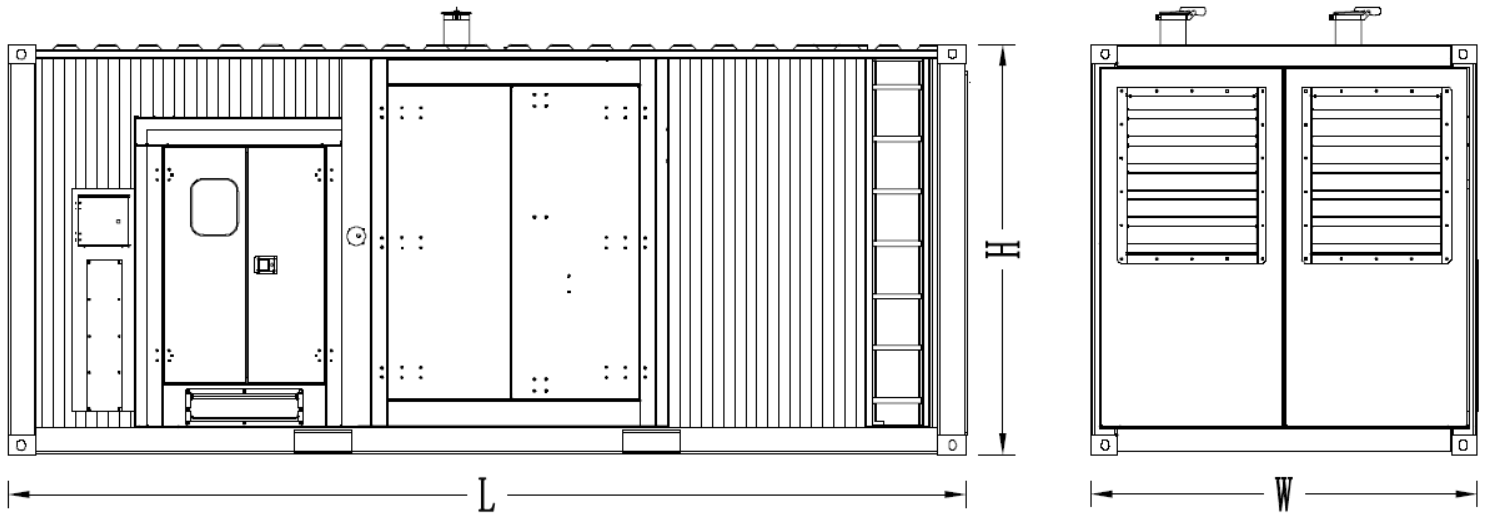
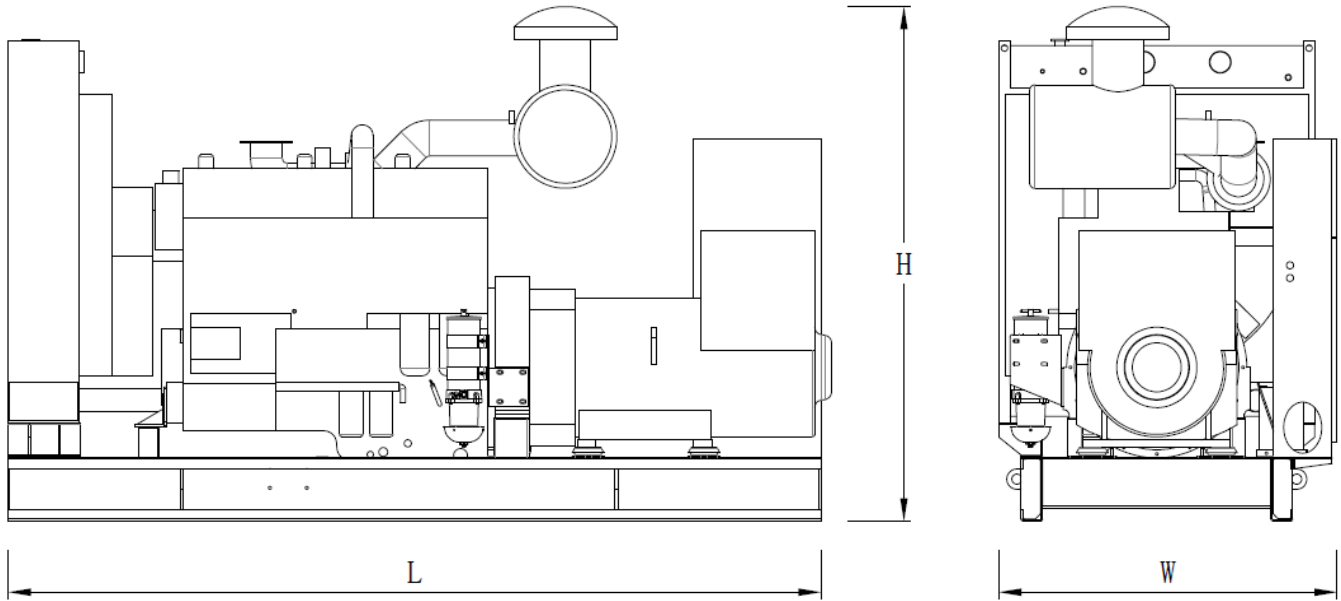
## Communication Interface

(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 GC6110. Proper specification is subject to customers' practice controller if other controller is selected.

Genset	Model	PPE825
	Prime Rating (kw)	600
	Standby Rating (kw)	660
	Prime current(A)	1083
	Frequency(hz)	50
Engine & Alternator	Engine Model	4006-23TAG2A
	Gross Engine output-Prime (kw)	632
	Gross Engine output-Standby (kw)	695
	Bore * stroke (mm)	160*190
	Cylinders and structure	6 In line
	Displacement(Liter)	22.921
	Compression Ratio	13.6:1
	Intake way	Turbocharged/ Air-Air intercooler
	Max intake resistance (KPa)	6.2
	Air intake (m3/h)	3840
	Max exhaust back pressure (KPa)	10
	Exhaust gas flow (m3/h)	10800
	Exhaust temp (°C)	430
	Cooling way	Water Radiator & Fan
	Fan exhaust flow (m3/min)	1200
	Coolant capacity (L)	105
	Highest water temperature(°C)	112
	Minimum air opening to room (m2)	5.0/4.5
	Thermostat range (°C)	71-85
	Max oil temperature (°C)	125
	Lubrication system oil capacity (L)	113.4
	Fuel consumption(L/H)	157
	Standard Governor/Class	Electronic
	Optional Alternator Model	Marathon--- MX-640-4 Engga----- EG355-600N Stamford---- HCI 634G Faraday----- FD6A1-4
	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 GC6110



Type	Dimension mm (L*W*H)	Weight KG	Fuel Tank Capacity L
Open Type	4600*1880*2300	6178	-
Silent Type	6058*2438*2591	9978	1500

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

**Contact Way**

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