

# POWERTEC Generator Set

## Powered by Perkins 2206C-E13TAG3 Engine

Model: PPE450    Prime Power: 320KW/400KVA    Standby Power: 360KW/450KVA

### 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

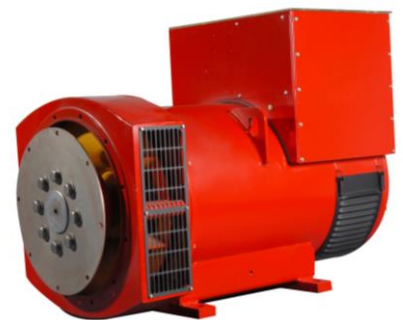
## Performance Description of Diesel Engine

- ◆ Model: **Perkins 2206C-E13TAG3**
- ◆ Construction: Excellent power-to-weight ratio and compact assembly size leads the power density to an optimal level, simplify the engine installation and decrease transportation cost. Designment of the engine has been taken full account of maintenance, greatly simplifies maintenance procedures
- ◆ Intake: Turbocharged
- ◆ Fuel system: Mechanical starting and electronic control unit fuel injector equipped with full-range electronic controller; the speed Governor is isochronous and speed is adjustable to meet ISO8528-5 Standard
- ◆ Lubrication system: Wet oil tank with oil injector and dip stick; Built in oil cooler and filter pipe jacking
- ◆ Cooling system: Gear-driven circulating pump; embedded belt-driven pusher fan; radiator with air-to-air pressurized cooler (independent supply)
- ◆ Filtration system: Embedded Air Filter; Ecoplus Fuel Filter with replaceable elements and primary Oil/Water separator; replaceable full flow Ecoplus oil filter
- ◆ Electrical equipment: 24V starter and 24V, 70A alternator (DC output); electronic control module (installed on the engine and equipped with wire insulation sleeve and inductor)
- ◆ 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 cover
- ◆ 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



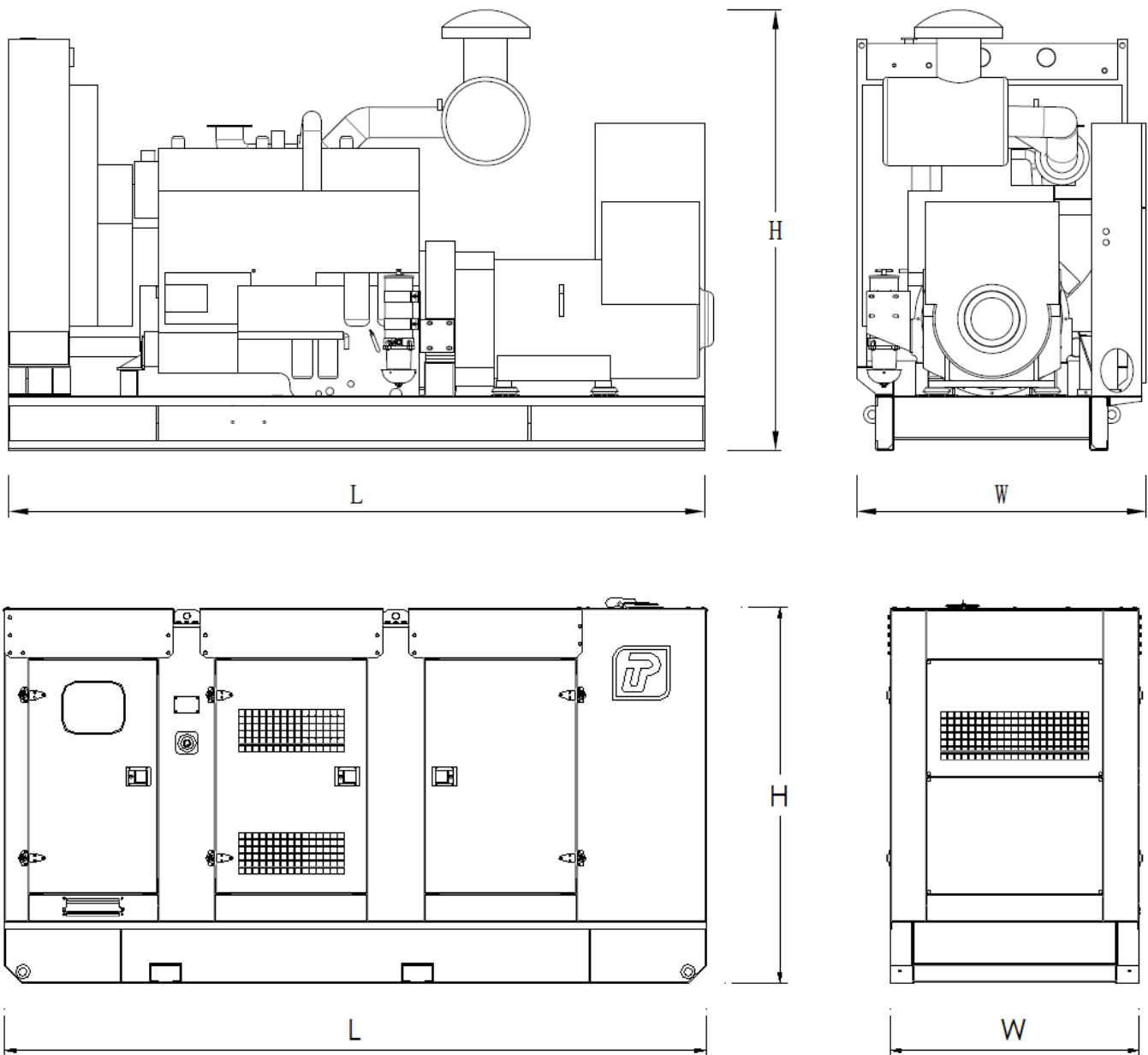
## Communication Interface

(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.

	Model	PPE450
Genset	Prime Rating (kw)	320
	Standby Rating (kw)	360
	Prime current(A)	577
	Frequency(hz)	50
Engine & Alternator	Engine Model	2206C-E13TAG3
	Gross Engine output-Prime (kw)	348.9
	Gross Engine output-Standby (kw)	392.3
	Bore * stroke (mm)	130*157
	Cylinders and structure	6 In line
	Displacement(Liter)	12.5
	Compression Ratio	16.3:1
	Intake way	Turbocharged/ Air-Air intercooler
	Max intake resistance (KPa)	6.4
	Air intake (m3/h)	1602
	Max exhaust back pressure (KPa)	10
	Exhaust gas flow (m3/h)	4320
	Exhaust temp (°C)	630
	Cooling way	Water Radiator & Fan
	Fan exhaust flow (m3/min)	654
	Coolant capacity (L)	51.4
	Highest water temperature(°C)	104
	Minimum air opening to room (m2)	2.5/2.0
	Thermostat range (°C)	87-98
	Max oil temperature (°C)	113
	Lubrication system oil capacity (L)	40
	Fuel consumption(L/H)	85
	Standard Governor/Class	Electronic injection
	Optional Alternator Model	Marathon--- MP-360-4 Engga----- EG315-320N Stamford---- S4L1D-F41 Faraday----- FD4LP1-4
	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	3400*1630*2005	3497	-
Silent Type	4700*1700*2450	5447	1000

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

**Contact Way**

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