

POWERTEC Generator Set

Powered by Perkins 1106A-70TAG Engine

Model: PPE220 Prime Power: 160KW/200KVA Standby Power: 176KW/220KVA

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)
- ◆ 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: **Perkins 1106A-70TAG**
- ◆ Construction: The 7-Liter engine has world-class power density; it's able to apply in any market steadily because of the mechanical fuel injection system, which enables it to accommodate different quality of fuel around the world.
- ◆ Intake: Turbo charged
- ◆ Fuel system: Mechanical fuel injection pump
- ◆ Lubrication system: Wet steel sump oil injector and dip stick
- ◆ Cooling system: Constant temperature control system; special radiator pipe and shield for tropical climates;
- ◆ Filtration system: Embedded air cleaner; Fuel filter; Rotary oil filter
- ◆ Electrical equipment: 12V starter and 12V, 15A alternator (DC output); 12V shutdown solenoid, activated; Glow plug Cold start assist device and heater/starter switch;
- ◆ Lower operating cost: The standard maintenance interval is set to 500 hours.high durability and reliability, extended warranty and easy installation procedures
- ◆ 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 than1000 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



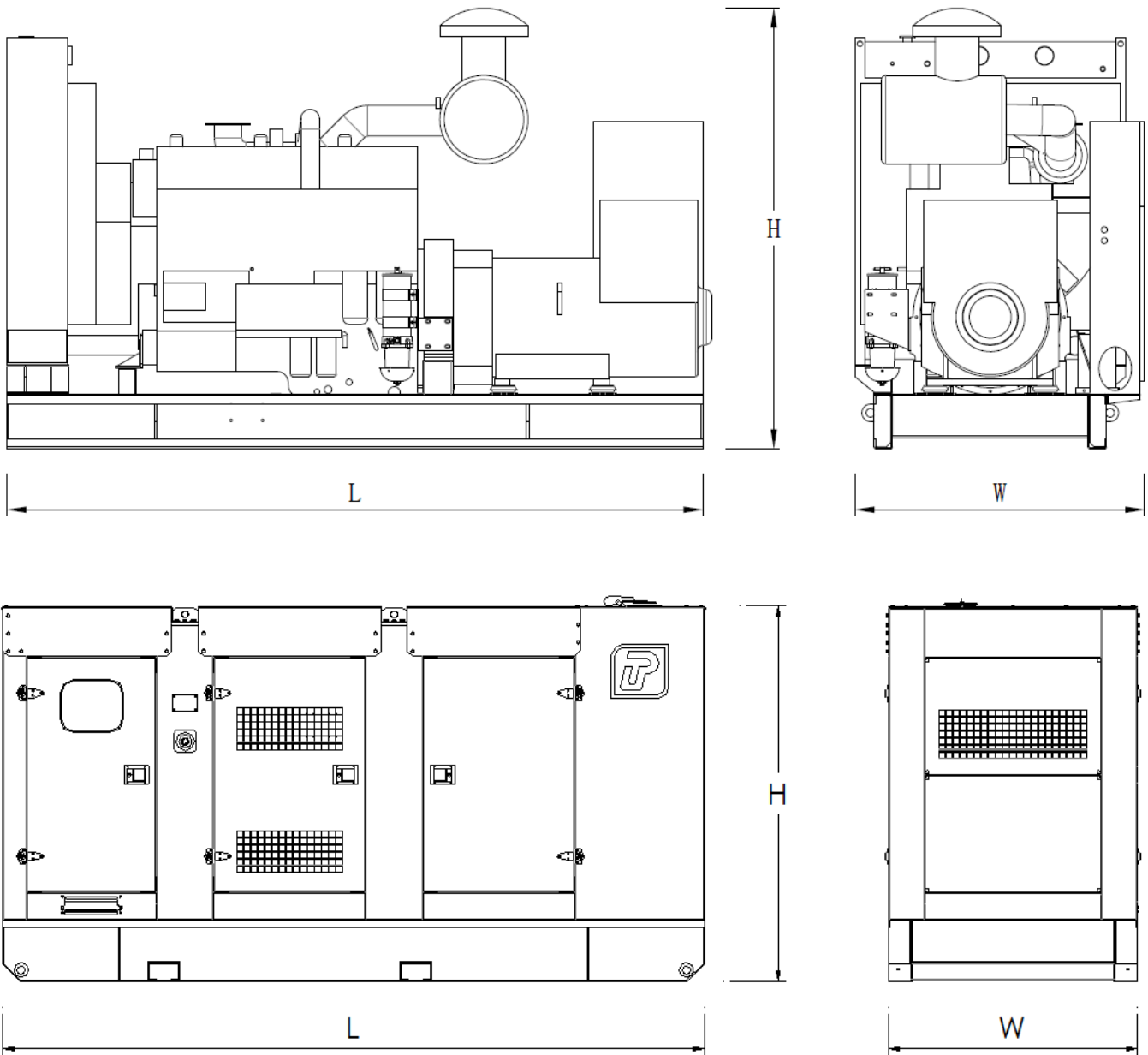
Communication Interface

(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	PPE220
Genset	Prime Rating (kw)	160
	Standby Rating (kw)	176
	Prime current(A)	288
	Frequency(hz)	50
Engine & Alternator	Engine Model	1106A-70TAG
	Gross Engine output-Prime (kw)	174
	Gross Engine output-Standby (kw)	191
	Bore * stroke (mm)	105*135
	Cylinders and structure	6 In line
	Displacement(Liter)	7
	Compression Ratio	16:1
	Intake way	Turbocharged/ Air-Air intercooler
	Max intake resistance (KPa)	8
	Air intake (m3/h)	780
	Max exhaust back pressure (KPa)	10
	Exhaust gas flow (m3/h)	1974
	Exhaust temp (°C)	580
	Cooling way	Water Radiator & Fan
	Fan exhaust flow (m3/min)	282
	Coolant capacity (L)	21
	Highest water temperature(°C)	112
	Minimum air opening to room (m2)	1.8/1.6
	Thermostat range (°C)	85-95
	Max oil temperature (°C)	125
	Lubrication system oil capacity (L)	16.5
	Fuel consumption(L/H)	45.8
	Standard Governor/Class	Mechanical
	Optional Alternator Model	Marathon--- MP-160-4A Engga----- EG280-160N Stamford---- UCI 274H Faraday----- FD3F1-4
	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	2700*1100*1590	2030	250
Silent Type	3950*1400*2115	3430	600

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

Contact Way

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