



## POWERTEC Generator Set

### Powered by Dongfeng Cummins QSZ13-G6 Engine

Model: PDC415B Prime Power: 300KW/375KVA Standby Power: 330KW/415KVA

#### 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

- ◆ Cummins 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 )
- ◆ Silencer、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: **Dongfeng Cummins QSZ13-G6**
- ◆ Construction: Adopt forged steel camshaft and crankshaft, High strength Cylinder block design, plenty parts cast on the Cylinders, stiffness strong, high pressure resistant capacity is high, longer service life.
- ◆ Starting system: 24VDC starting motor
- ◆ Integrated design: Cylinders、cylinder head together, decreased connection, reduced 40% parts than other same kind engine, failure rate bring down a lot.
- ◆ Advanced design and superior manufacture: Adapt to harsh severe work condition, high strength and has heavy loading work capacity.
- ◆ Fuel system: Rotator high pressure fuel pump, lower fuel consumption, and reduce noise effectively.
- ◆ Lubrication system: The cylinder sleeve designed by honing on the platform can effectively prevent oil leakage with perfect geometry.
- ◆ Engine Operating Environment Description:

The engine can work under the following conditions without modulating power:

A. 1800r/min engine--altitude less than 1000m, ambient temperature less than 40 °C

B. 1500r/min engine--altitude less than 1000m, ambient temperature less than 40 °C

If engine operating environment exceed above condition, when altitude is higher than 1500m ,engine power will drop 4% as altitude increase each 300m. When ambient temperature is higher than 40°C (104° F) ,engine power will drop 3% -5% as temperature increase each 11°C (1% dropping ,when temperature increase each 10° F ) The engine allows continuous operation with a maximum altitude of 4,500m.



## 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



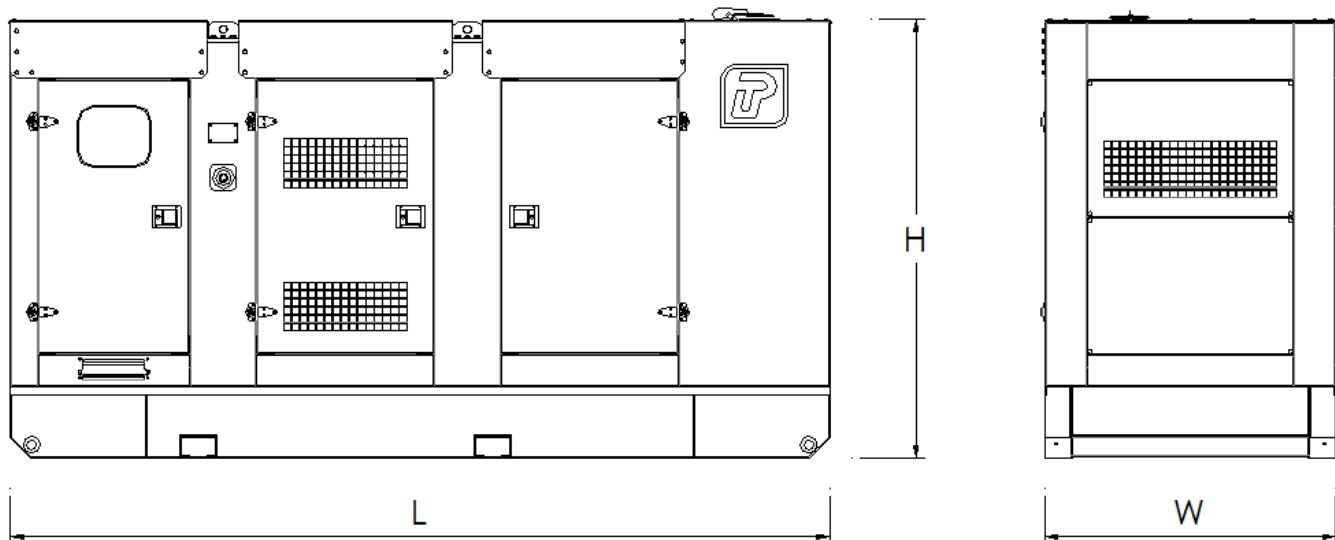
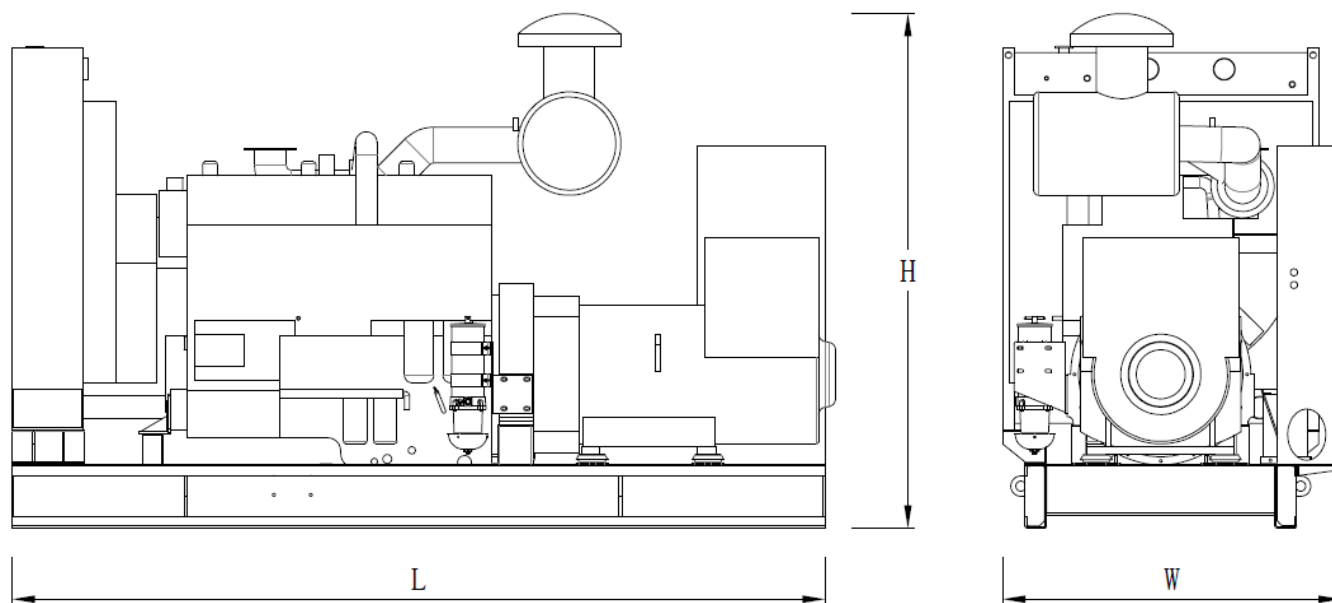
## Communication Interface

(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.**

Genset	Model	PDC415B
	Prime Rating (kw)	300
	Standby Rating (kw)	330
	Prime current(A)	541
	Frequency(hz)	50
Engine & Alternator	Engine Model	QSZ13-G6
	Gross Engine output-Prime (kw)	328
	Gross Engine output-Standby (kw)	375
	Bore * stroke (mm)	130*163
	Cylinders and structure	6 in line
	Displacement(Liter)	13
	Compression Ratio	17:1
	Intake way	Turbocharged/ Air-Air intercooler
	Max intake resistance (KPa)	6.2
	Air intake (m3/h)	1638
	Max exhaust back pressure (KPa)	13
	Exhaust gas flow (m3/h)	1548
	Exhaust temp (°C)	484
	Cooling way	Water Radiator & Fan
	Fan exhaust flow (m3/min)	1057
	Coolant capacity (L)	23.1
	Highest water temperature(°C)	102
	Minimum air opening to room (m2)	2.8/2.5
	Thermostat range (°C)	82-94
	Max oil temperature (°C)	121
	Lubrication system oil capacity (L)	75.33
	Fuel consumption(L/H)	81.6
	Standard Governor/Class	Electronic injection
	Optional Alternator Model	Marathon--- MP-320-4A Engga----- EG315-300N Stamford----S4L1D-F41 Faraday----- FD4L1-4
	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	3094*1443*1911	3385	-
Silent Type	4700*1700*2450	5335	1000

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

**Contact Way**

**Powertec Generator System Co., Ltd**

Add: Danshui Yanna Industry Zone, Huiyang, Huizhou, Guangdong, China

Tel: 0752-3911119 / 0752-3911118

FAX: 0752-3911110

Web: [www.powertec.com.cn](http://www.powertec.com.cn) Email: [sales@powertecgs.com](mailto:sales@powertecgs.com)