



POWERTEC Generator Set

Powered by Cummins QSK19-G4 Engine

Model: PCC715B Prime Power: 520KW/650KVA Standby Power: 570KW/715KVA

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 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

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



Performance Description of Diesel Engine

- ◆ Model: **Cummins QSK19-G4**
- ◆ Construction: Replaceable wet type cylinder block, well heat Dissipation, easy for change, high universality of parts, high Series, easy for maintenance, cylinder block and cylinder head Adopt in-built pressure lubricating oil, compact structure, Low failure rate
- ◆ Starting system: 24VDC starter 35A battery charger
- ◆ Intake and exhaust: High efficiency Holset Waste Gas Supercharger improve burning, pressure type pulse exhaust Pipes take full use of exhaust energy and enhance engine Efficiency .Air to air cooling technology realize economic Fuel consumption and improve emission.
- ◆ Cooling system: Gear centrifugal water pump forces water cooling And large flow channel has good cooling performance Rotary water filter and special DCA additive able to prevent corrosion cavitation and control PH value of the coolant remove impurity.
- ◆ Fuel system: Cummins patented technology PT fuel system optimizes combustion and upsurge power. STC distribution system ensures working combustion more completely. Low pressure oil supply system and fuel one way circuit provide safety and reliability.
- ◆ Lubrication system: All moving parts are forced lubrication. Large capacity integral gear driven pump provides pressure lubrication to all bearings and provides supply for piston cooling. Oil cooler and compound filters keep lubrication in good position.
- ◆ Engine Operating Environment Description:
The engine can work under the following conditions without modulating power:
A. 1800r/min engine--altitude less than 1500 m (5000ft), ambient temperature less than 40 °C (104° F)
B. 1500r/min engine--altitude less than 1310m (4300ft), ambient temperature less than 40 °C (104° F)
If engine operating environment exceed above condition, when altitude is higher than 1500m (5000ft) ,engine power will drop 4% as altitude increase each 300m(1000ft).When ambient temperature is higher than 40°C(104° F) ,engine power will drop 2% as temperature increase each 11°C(1% dropping ,when temperature increase each 10° F)



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



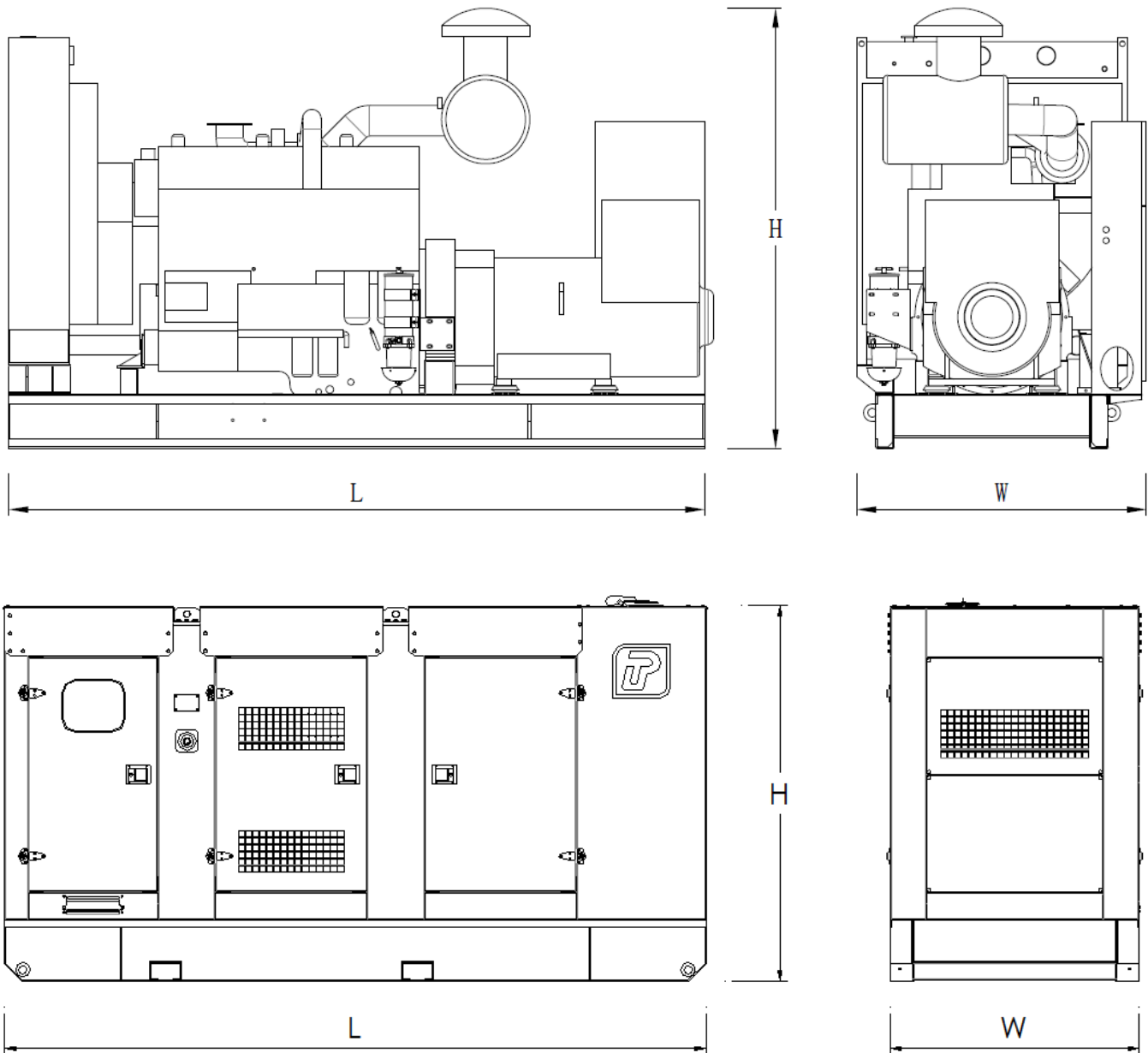
Communication Interface

(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	PCC715B
	Prime Rating (kw)	520
	Standby Rating (kw)	570
	Prime current(A)	938
	Frequency(hz)	50
Engine & Alternator	Engine Model	QSK19-G4
	Gross Engine output-Prime (kw)	575
	Gross Engine output-Standby (kw)	634
	Bore * stroke (mm)	159*159
	Cylinders and structure	6 In line
	Displacement(Liter)	19
	Compression Ratio	15:1
	Intake way	Turbocharged/Air-Air intercooler
	Max intake resistance (KPa)	3.74
	Air intake (m3/h)	2790
	Max exhaust back pressure (KPa)	10
	Exhaust gas flow (m3/h)	7110
	Exhaust temp (°C)	505
	Cooling way	Water Radiator & Fan
	Fan exhaust flow (m3/min)	985
	Coolant capacity (L)	112
	Highest water temperature(°C)	96
	Minimum air opening to room (m2)	5.0/3.3
	Thermostat range (°C)	83-95
	Max oil temperature (°C)	121
	Lubrication system oil capacity (L)	84.4
	Fuel consumption(L/H)	143
	Standard Governor/Class	Electronic injection
	Optional Alternator Model	Marathon--- MX-560-4 Engga----- EG355-560N Stamford---- HCI 544F Faraday----- FD5LP1-4
	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	3750*1550*2100	4345	-
Silent Type	4700*1700*2450	6295	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 Email: sales@powertecgs.com