

# Cummins Power Generation

## C700 D5

### Diesel Generator Set



#### > Specification sheet

**C700 D5**

**50Hz**

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#### Made by Cummins Power Generation

Cummins Power Generation commercial diesel generator sets integrate the universal design, production and testing standard of Cummins, providing fully reliable and integrated power generation systems with optimum performance for applications in standby power, prime power and continuous operation.

In accordance with the standard of ISO8528-2005 and GB/T2820-2009 AC Generator Sets Driven by Reciprocating Internal Combustion Engine.

Certified to ISO9001 and ISO9002 for generator set design and manufacture.

Cummins provides full quality assurance and is responsible for the warranty of generator sets including engine, alternator and control system.

National specialized service network ensures 24 hours after-sale service and the supply of parts and accessories.

#### Standard Features of Generator Set

**Engine:** Cummins VTA28 series engine.

Type: Four-stroke, water cooled, turbocharged and aftercooled.

Structure: Cast steel crankshaft, connecting rod, cast iron cylinder block.

Cooling system: Built-in water circulating pump and thermostat improves working efficiency of engine.

Filter: Cummins Fleetguard series high-precision filter.

**Alternator:** Stamford HC series alternator.

Type: Revolving magnetic field, single bearing, 4 pole, brushless, drip proof structure, in accordance with GB755, BS5000, and IEC34-1.

Stator: Taper slot structure, 2/3 pitch windings, effectively suppressing waveform distortion of third harmonic current and output voltage under non-linear load.

Rotor: Flexible driving disc connected to engine directly, perfect damper winding reduces parallel oscillation.

Cooling system: Directly drive centrifugal blower fan.

**Control System:** PowerCommand® control system based on microprocessor.

**Short-Circuit Protection:** Schneider breaker, AmpSentry™ patent protection, PowerCommand® controller.

**Base Frame:** Bolted steel base frame with A/V mounting, complex seismic structure and bottom oil tank.

**Radiator:** Standard genset mounted radiator.

**Standard Accessories:** Exhaust elbow, exhaust bellows, exhaust silencer, etc.

Genset model	Standby Power		Prime Power		Engine	Alternator	Controller
	kVA	kW	kVA	kW			
C700 D5	706	565	640	512	VTA28-G5	HCI544F	PCC1301
230/400VAC, 50Hz, 0.8PF (lagging) 3 phase							

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## Generator Set Specifications

	Standby	Prime
Governor regulation class	ISO8528 G3	
Voltage regulation (no load to full load)	±1%	
Steady-state voltage variation	±1%	
Frequency regulation (no load to full load)	Isochronous (0%)	
Steady-state frequency variation	±0.25%	
EMC compatibility	BS EN 61000-6-4 / BS EN 61000-6-2	
Fuel consumption, L/hr@100% load	154	140
Battery starting capacity, A/hr	200*2	
Total coolant capacity (with engine and water tank), L	180	
Bottom oil tank capacity, L	NA	

## Engine Specifications

Model	VTA28-G5
Configuration	Cast iron, V-type, 12-cylinder
Displacement, L	28.0
Compression ratio	13.1:1
Aspiration	Turbocharged and water-to-air aftercooled
Fuel system	Direct injection
Bore* stroke, mm	140*152
Rated speed, rpm	1500
Governor type	Electronic
Starting voltage	24V, negative ground
Battery charging alternator	24V,35A
Cold starting current, CCA	1800 (-18°C)
Lube oil capacity, L	83
Combustion air (standby), m <sup>3</sup> /s	0.88
Coolant capacity, L	80
Maximum fuel flow, L/hr	337
Maximum fuel inlet resistance, mmHg	203

## Alternator Specifications

Protection class	IP23
Insulation system	Class H
Standard temperature rise	Standby, 150°C (at 40°C ambient temperature)
Exciting type	Self-exciting
AC waveform total harmonic distortion	<1.5% no load, <5% 3-phase balanced linear load
Telephone influence factor (TIF)	<50 (per NEMA MG1-22.43)
Telephone harmonic factor (THF)	<2%

## Exhaust Specifications

	Standby	Prime
Exhaust gas flow at rated load, L/S	2048	1987
Exhaust gas temperature, °C	507	493
Maximum exhaust back pressure, kPa	10	

## Cooling System Specifications

Radiator ambient design, °C	40
Minimum air inlet (outlet) area, m <sup>2</sup>	4.25 (3.3)
Radiator tank capacity, L	100
Radiator cooling air flow (standby), m <sup>3</sup> /s	17.5
Total heat rejection, kW	96.8
Maximum cooling air flow static resistance, Pa	124.5

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# PowerCommand® Control

## PCC1301



### Standard Features

- ☐ Digital voltage regulation  
Full wave, single phase (line to line) sensing.  
Digital engine speed governing, realized by external governor function module
- ☐ 3-phase voltage and current metering  
Applicable for Wye delta or delta voltage sensing
- ☐ Engine starting  
Includes relay drivers for starter, fuel shut off (FSO), glow plug relay circuit
- ☐ Generator set monitoring  
Monitors status of all critical engine and alternator functions and specifications
- ☐ Generator set protection  
Protects engine and alternator
- ☐ Operator display panel  
Displays English and simple symbols/ data, critical parameters and operation data logs
- ☐ Advanced serviceability  
Uses InPower™, a PC-based software service tool
- ☐ Environmental protection  
The control system is designed for reliable operation in harsh environments. The core control board is an encapsulated module that is fully protected from the elements.
- ☐ Configurable inputs and outputs  
Two discrete inputs and two dry contact relay outputs

### Internal Control Functions

#### Engine Control

- Automatic operation mode
- Emergency stop
- Sleep mode
- Engine starting
- Multicrank
- Engine speed governing
- Mechanical/Electronic governor
- Emergency operation mode

#### Alternator Control

- Output voltage regulation
- Torque-matched volts/Hz overload control

### Standard Protective Functions

#### Genset Protection

- ☐ Configurable alarm and status inputs
- ☐ Emergency stop

#### Engine Protection

- ☐ Overspeed shutdown
- ☐ Low lube oil pressure warning/shutdown
- High coolant temperature warning/shutdown
- Low/High battery voltage warning
- Weak battery warning
- Fail to start/overcrank shutdown
- ☐ Low coolant temperature warning
- ☐ Sensor failure indication

#### Alternator Protection

- ☐ High/Low AC voltage shutdown
- ☐ Overcurrent warning/shutdown
- ☐ Under frequency shutdown
- ☐ Control switch—RUN/OFF/AUTO
- ☐ "Fault/status" lamp
- ☐ Alphanumeric display panel
- ☐ Over frequency shutdown
- ☐ Loss of sensing voltage shutdown
- ☐ Field Overload Shutdown
- ☐ Screen menu button
- ☐ Parent menu key
- ☐ Digital engine speed governing module

#### Operator Adjustments

- ☐ Time delay start: 0-300 seconds
- ☐ Time delay stop: 0-600 seconds
- ☐ Output voltage:  $\pm 5\%$

### Alphanumeric Display Panel

- ☐ Generator set hardware data display
- ☐ Generator set data display and calibration
- ☐ Data logging
- ☐ Engine data
- ☐ Fault history

### Communication Connections

- ☐ Includes RS485 communication connections, supporting MODBUS RTU standard protocol. It can be used to get data for the customer control system, and applied in InPower™—Cummins service software or PowerCommand® for Windows—a monitoring software.
- ☐ PCCNET network interface: built-in RS485 internet, applied in the communication for the status indicator, input/output connection

### Software

- ☐ InPower™ service software: it is designed to realize genset configuration and fault diagnose.
- ☐ PowerCommand® for Window™ monitoring software: it is designed to realize personal computer monitoring and control.

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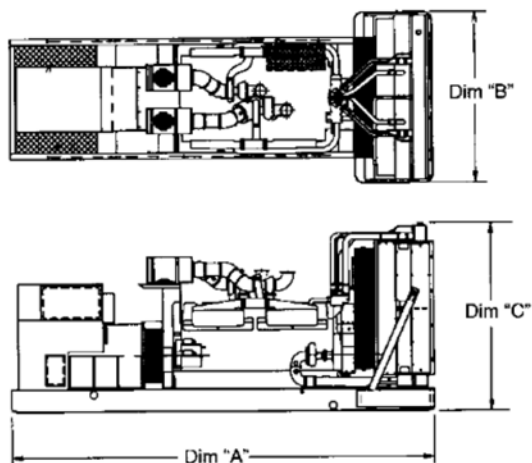
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## Standard Generator Set

Model	Dim "A" (mm)	Dim "B" (mm)	Dim "C" (mm)	Weight* Dry Weight(kg)
C700 D5	3977	1702	2219	6040

## Standard Outline Drawings of Generator Set



The outlines are for illustrative purposes only, not used for installation design.

Please refer to genset outline drawing for exact representation of this model for installation design.

## Ratings Definitions:

### Emergency Standby Power (ESP):

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with GB.T2820/ISO 8528. The effective oil limited power is in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

### Limited-time Running Power (LTP):

Applicable for supplying power to a constant electrical load for limited hours. Limited-time Running Power (LTP) is in accordance with GB.T2820/ISO 8528.

### Prime Power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with GB.T2820/ISO 8528. A 10% overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

### Base Load (Continuous) Power (COP):

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with GB.T2820/ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

## East Asia, Cummins Power Generation

NO.2, Rongchang East Street, Beijing Economic -Technological Development Area, Beijing, P.R.China.  
Post code: 100176

Tel: 86 (10) 5902 3000

Fax: 86 (10) 5902 3199

Email: EastAsia.CumminsPower@cummins.com

Cummins hotline (China): 400-810-5252

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