Cummins Power Generation
C100 D5
Diesel Generator Set

> Specification sheet
C100 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 6B series engine.
Type：Four-stroke, water cooled, turbocharged.
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 UC 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			
C100 D5	100	80	91	73	6BT5.9-G1	UCI274C	PC1.1

230/400VAC，50Hz，0.8PF（lagging）3-phase

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Generator Set Specifications

	Standby	Prime
Governor regulation class	ISO8528 G1	
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, g/kw·h(L/hr)@100% load	210(23.4)	208(21.7)
Battery starting capacity, A/hr	100*2	
Total coolant capacity (with engine and water tank), L	34	
Bottom oil tank capacity, L	250	

Engine Specifications

Model	6BT5.9-G1
Configuration	Cast iron, in-line, 6-cylinder
Displacement, L	5.9
Compression ratio	17.3:1
Aspiration	Turbocharged
Fuel system	Direct injection
Bore* stroke, mm	102*120
Rated speed, rpm	1500
Governor type	Mechanical
Starting voltage	24V, negative ground
Battery charging alternator	24V,40A
Cold starting current, CCA	400 (-12℃)
Lube oil capacity, L	16
Combustion air (standby), m³/s	0.1
Coolant capacity, L	8
Maximum fuel flow, L/hr	30
Maximum fuel inlet resistance, mmHg	102

Alternator Specifications

Protection class	IP23
Insulation system	Class H
Standard temperature rise	Standby, 150℃（at 40℃ 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	271	252
Exhaust gas temperature, ℃	510	480
Maximum exhaust back pressure, kPa	10	

Cooling System Specifications

Radiator ambient design, ℃	50
Minimum air inlet (outlet) area, ㎡	0.87（0.7）
Radiator tank capacity, L	26
Radiator cooling air flow(standby), m³/s	3.8
Total heat rejection, kW	21.6
Maximum cooling air flow static resistance, Pa	124.5

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PowerCommand® Control

PCC 1302

Control System

PowerCommand® control system is a microprocessor-based generator set monitoring system. The control system includes a simple operator interface panel that allows for manual and remote start/stop operations, as well as fault annunciation. The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional control system. These control systems have been designed and tested to meet the harsh environment in which gensets are typically applied.

PowerStart generator set control is suitable for use on a wide range of generator sets in non-paralleling applications. The control system is suitable for use with reconnectable or non-reconnectable generators, and it can be configured for any frequency, voltage and power connection configuration from 120VAC and 600 VAC line-to-line with 50Hz or 60Hz power dimension.

The control system includes an intuitive operator interface panel that allows for complete genset control as well as system metering, fault annunciation, configuration and diagnostics. The interface includes seven genset status LED lamps marked with both internationally accepted symbols and English text to comply with customer needs. The interface also includes a LED backlit LCD display with tactile feel soft-switches for easy operation and screen navigation. The run/auto/off switch function is also integrated into the interface panel.

All data on the control system can be viewed by scrolling through screens with the navigation keys. The control displays the current active fault and a time-ordered history of previous fault.

The power for the control system is derived from the generator set starting batteries. The control system functions over a voltage range from 8VDC to 30VDC.

Major Features

- **LCD Display** – LED backlit LCD display of 2 lines with 16 characters per line.
- **Generator Set Monitoring And Protective System.**
- **24 VDC Battery Operation.**
- **Engine Starting** – includes relay drivers for starter, fuel shut off (FSO), solid-state output circuits of glow plug. Start disconnects are achieved by monitoring main alternator output frequency.
- **Remote Start** – Connect interfaces of change-over switch.
- **Environment Protection** –The control system is designed for reliable operation in harsh environments.
- **Warranty And Service** – Backed by a comprehensive warranty and worldwide distributor service network.
- **Certification** – Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant ISO, IEC Mil and CE standards.

Major Control Functions

LCD Display – LED backlit LCD display of 2 lines with 16 characters per line.

Operation Interface – 6 tactile feel membrane switches that are used for LCD display navigation, generator set operation and control system setting. All the key switches are marked with internationally accepted symbols and English text.

Data Logging – Includes engine run time, controller on time.

Fault History – Provides a record of the most recent fault conditions with control hours time stamp. Up to 10 events are stored in the control non-volatile memory.

Alternator Data：

- Voltage（single or 3 - phase line voltage and phase voltage）
- Current（single or 3 - phase）
- kVA（3 - phase and total）
- Frequency

Engine Data

- Starting battery voltage
- Engine run time
- Engine temperature
- Engine oil pressure

Service Adjustments – The operator panel includes provisions for adjustment and calibration of generator set control functions. Functions include:

- Voltage selection
- Frequency selection
- Configurable inputs set up
- Configurable outputs set up
- Meter calibration
- Units of measurement

Protective Functions

On operation of a protective function the control will indicate a fault by illuminating corresponding LED indicators on display panel, as well as display fault code and fault description on LED display panel. The nature of the fault and time of occurrence are logged in the control system. The service manual and InPower service tool will provide service keys and procedures based on the service codes provided.

Field Control Interface

Output signals to the base control functions include:
- Remote start
- Local and emergency stop
- Configurable inputs: the control includes (4) customer input signals

Output signals from the control system include:
Configurable outputs: The controller has (1) solid state drive output rated at 1 A. The output can be configured to activate to get ready to load, or activate on common alarm and warning, common shutdown.

Communications connections include:
PC tool interface: This RS-485 communication port allows the control system to communicate with a personal computer running InPower software. Note: RS-232 or USB to RS-485 converter is required for the communication between PC and the control system.

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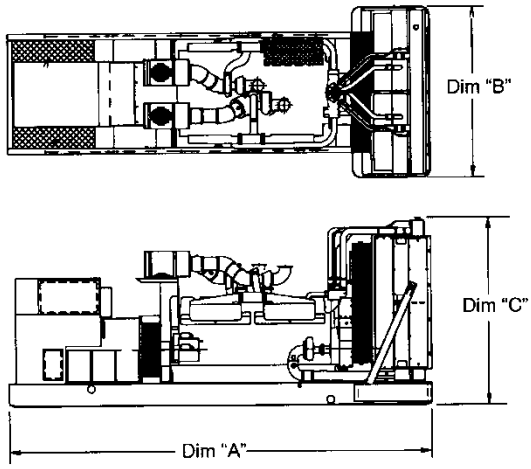
Standard Generator Set

Model	Dim “A”（mm）	Dim “B”（mm）	Dim “C”（mm）	Weight* Dry Weight（kg）
C100 D5	2374	1050	1548	1462

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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