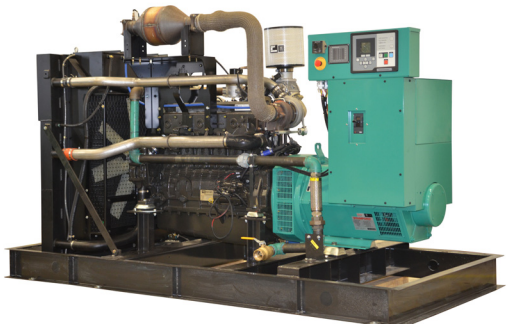
Specification sheet

Gaseous fuel generator set

11.1L engine series

130 kW - 200 kW 60 Hz



Description

The Cummins 11.1L engine series commercial generator set (GenSet) boasts a fully-integrated power generation system providing optimum performance, reliability and versatility for stationary non-emergency standby and non-emergency prime power applications.

Features

- Power Solutions International (PSI) industrial engine - rugged 4-cycle industrial spark-ignited engine delivers reliable power, low emissions, and quick response to load changes
- Designed, tested, and certified to UL 2200 standards (See Fuel installation requirements on page 5)
- Stamford rugged and reliable alternator with state-of-the-art technology
- One-year warranty supported by a worldwide Cummins twenty-four hour, seven days-a-week distributor network
- Accepts 100% rated load in a single step
- Surge rating - 110% of nameplate
- The GenSet accepts full rated load in a single step in accordance with NFPA 110 Type 10 (ten seconds) for Level 1 and Level 2 Emergency or Standby Power Supply Systems (EPSSs)
- Efficient and localized operation monitoring and control options:
  - Modbus over the Internet (monitor and control)
  - Remote HMI (monitor and control)
  - Field server reliable interface to a building management system Supervisory Control and Data Acquisition (SCADA) (monitor, only)
- Optional Power Command Control (PCC) 3300 technology provides digital (precise) frequency and voltage regulation

Model	Standby power rating*		Prime power rating*	Emissions compliance	Engine data sheet
	Propane 60 Hz kW (kVa)	NG 60 Hz kW (kVa)	NG 60 Hz kW (kVa)		
C200N6	130 (163)	200 (250)		EPA SI stationary non-emergency certified	PSI 36300018
			180 (225)	EPA stationary non-emergency and MOH certified	

* Tested at 0.8 power factor (PF) per NFPA 110.

GenSet specifications

Voltage regulation, no load to full load	±1%
Random voltage variation	±1% (three-phase only)
Frequency regulation	Isochronous
Random frequency variation	±0.5%

Engine Specifications

Base Engine	Power Solutions International (PSI)
Displacement	11.1 L (677 in^3)
Regenerative Power	11 kW
Cylinder Block Configuration	Cast iron
Cranking Current	900 amps at ambient temperature of 0 °C (32 °F)
Battery Charging Alternator	45 amps
Battery Type	4D (x2)
Starting Voltage	24-volt, negative ground
Standard Cooling System	See derates on Engine Data Sheet
Lube Oil Filter Types	One spin-on canister-combination full flow with bypass

Alternator specifications

Design	Brushless, 4-pole, drip-proof revolving field
Stator	2/3 pitch
Rotor	Direct-coupled by flexible disc
Insulation System	Class H per NEMA MG1-1.65 or better
Standard Temperature Rise*	125 °C
Exciter Type	Shunt or Permanent Magnet Generator (PMG)
Phase Rotation	A (U), B (V), C (W)
Alternator Cooling	Direct-drive centrifugal blower

* For UL 1004 ratings, refer to temperature rise at 120 °C or below, and ambient temperature up to 40 °C

Full-load amperage (FLA) at rated voltage

		Voltage*								
Model	**Rating**	**120/240 (1 Ph)**	**120/208**	**127/220**	**139/240**	**220/380**	**240/416**	**254/440**	**277/480**	**347/600**
C200N6	Propane Stdby	N/A	451	426	391	247	226	213	195	156
C200N6	NG Prime	N/A	625	590	541	342	312	295	271	217
C200N6	NG Standby	N/A	694	656	601	380	347	328	301	241

*Three-phase FLA based on 0.8 power factor (PF).

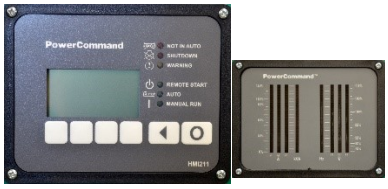
Rated load fuel consumption in standard cubic feet per hour (CFH)*

Model	Rating	Fuel type	100% Load	75% Load	50% Load	25% Load
C200N6	Standby	Propane	814	651	488	244
C200N6	Prime	NG	2043	1630	1341	518
C200N6	Standby	NG	2115	1692	1269	635

*See Fuel installation requirements on page 5.

NOTE: Fuel inlet pressure, measured at the fuel shut off valve while under full load, must be 180 to 280 mm WC (7 to 11 in. WC). Fuel supply pressure must not exceed 635 mm WC (25 in. WC) under any conditions.

PowerCommand 1.1 control system



The PowerCommand Control is an integrated GenSet control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional GenSet control systems. Prototype tested; UL, CSA, and CE compliant.

The PowerCommand control system includes:

Features

- InPower PC-based service tool available for detailed diagnostics.
- Battery monitoring and testing features and smart starting control system.
- Standard PowerCommand Control Network (PCCNet) interface to devices such as remote annunciator for NFPA 110 applications.

Environmental conditions

- Control boards potted for environmental protection.
- Ambient operating temperature from: -40 to +70 ºC (-40 to 158 ºF). HMI from -20 to +70 ºC (-4 to 158 ºF).
- Operating altitude up to 4000 m (13,000 ft.).

AC protection

- Field overload.
- Over current warning and shutdown.
- Over and under voltage shutdown.
- Over and under frequency shutdown.
- Over excitation (loss of sensing) fault.
- Integrated digital electronic voltage regulator.

Digital voltage regulation

- Three-phase line-to-line sensing.
- Configurable torque matching.
- Integrated digital electronic voltage regulator.

Engine data

- DC voltage battery charge.
- Adjustable lube oil pressure.
- Adjustable engine idle speed.
- 12/24 VDC battery configuration.

Alternator data

- 50/60 Hz frequency.
- Three-phase AC current.
- AC: Single or three-phase line-to-line or line-to-neutral.
- Digital output voltage regulation within +/-1.0% any loads between no load to full. Drift equals no more than +/-1.5% for 40 ºC (104 ºF) temperature change in eight hours.

Control functions

- Cycle cranking.
- PCCNet interface.
- Configurable inputs (2).
- Configurable outputs (2).
- Remote emergency stop.
- Time delay start and cooldown.

Engine protection

- Cranking lockout.
- Overspeed shutdown.
- Fail to start (overcrank) shutdown.
- Fail to crank shutdown.
- Sensor failure indication.
- Redundant start disconnect.
- Low fuel level warning or shutdown.
- Low oil pressure warning and shutdown.
- High coolant temperature warning and shutdown.
- Low coolant level warning or shutdown.
- Low coolant temperature warning.
- High, low, and weak battery voltage warning.

Operator/display panel

- Manual off switch.
- Bargraph display (optional).
- LED lamps indicating GenSet running, not in auto, common warning, common shutdown, manual run mode, and remote start.
- Alphanumeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols).

Other display data

- Fault history.
- GenSet model data.
- RS485 Modbus interface.
- Start attempts, starts, running hours.
- Data logging and fault simulation (requires InPower service tool).

Control options

- Remote operator panel.
- PMG alternator excitation.
- AC output analog meters (bargraph).
- Auxiliary output relays (2).
- Modbus to BACnet Module.
- 120/240 V, 100 W anti-condensation heater.
- Remote annunciator with configurable inputs (3) and configurable outputs (4).
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8).
- PowerCommand 2.2 control with AmpSentry protection.

PowerCommand 3.3 control system

An integrated microprocessor based generator set control system providing voltage regulation, engine protection, alternator protection, operator interface and isochronous governing. Refer to document S-1570 for more detailed information on the control.

AmpSentry - Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.

Power management - Control function provides battery monitoring and testing features and smart starting control system.

Advanced control methodology -Three-phase sensing, full wave rectified voltage regulation, with a PWM output for stable operation with all load types.

Communications interface - Control comes standard with PCCNet and Modbus interface.

Regulation compliant - Prototype tested: UL, CSA and CE compliant.

Service - InPower PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

Easily upgradeable - PowerCommand controls are designed with common control interfaces.

Reliable design - The control system is designed for reliable operation in harsh environment.

Multi-language support - English, Spanish, French (standard); other languages (optional).

Operator panel features

Operator/display panel

- Displays paralleling breaker status.
- 320 x 240 pixels graphic LED backlight LCD.
- Provides direct control of the paralleling breaker.
- Alphanumeric display with pushbuttons.
- Auto, manual, start, stop, fault reset, and lamp test/panel lamp switches.
- LED lamps indicating GenSet running, remote start, not in auto, common shutdown, common warning, manual run mode, auto mode and stop.

Paralleling control functions

- First Start Sensor System selects first genset to close to bus.
- Phase Lock Loop Synchronizer with voltage matching.
- Sync check relay.
- Isochronous kW and kVar load sharing.
- Load govern control for utility paralleling.
- Extended Paralleling (baseload/peak shave) Mode.
- Digital power transfer control, for use with a breaker pair to provide open transition, closed transition, ramping closed transition, peaking and base load functions.

Other control features

- 150 watt anti-condensation heater.
- DC distribution panel.
- AC auxiliary distribution panel.

Alternator data

- Line-to-neutral and line-to-line AC volts.
- Three-phase AC current.
- Frequency.
- kW, kVar, and power factor kVa (three-phase and total).
- Winding temperature (optional).
- Bearing temperature (optional).

Engine data

- DC voltage and engine speed.
- Lube oil pressure and temperature.
- Coolant temperature.
- Comprehensive FAE data.

Other display data

- GenSet model data.
- Start attempts, starts, running hours, kW hours.
- Load profile (operating hours at % load in 5% increments).
- Fault history – up to 32 events.
- Data logging and fault simulation (requires InPower™).
- Air cleaner restriction indication.
- Exhaust temperature in each cylinder.

Standard control functions

Digital governing

- Temperature dynamic governing.
- Integrated digital electronic isochronous governing.

Digital voltage regulation

- Configurable torque matching.
- 3-phase, 4 wire line-to-line sensing.
- Integrated digital electronic voltage regulator.

AmpSentry AC protection

- AmpSentry protective relay.
- Over current and short circuit shutdown.
- Over current warning.
- Single and three-phase fault regulation.
- Low oil pressure warning and shutdown.
- High coolant temperature warning and shutdown.
- Low coolant level warning and shutdown.
- Low coolant temperature warning.
- Over and under voltage shutdown.
- Over and under frequency shutdown.
- Overload warning with alarm contact.
- Reverse power and reverse var shutdown.
- Field overload shutdown.
- Fuel-in-rupture-basin warning or shutdown.
- Full authority electronic engine protection.
- AMM arc flash provision

Engine protection

- Cranking lockout; overspeed shutdown; and battleshort.
- Sensor failure indication.
- Low fuel level warning or shutdown.
- Fail to start (overcrank) and fail to crank shutdown.
- Full authority electronic engine protection.
- Battery voltage monitoring, protection, and testing.

Control functions

- Data logging and cycle cranking.
- Load shed.
- Remote emergency stop.
- Time delay start and cooldown.
- Configurable inputs and outputs (20).
- Real time clock for fault and event time stamping.
- Exerciser clock and time of day start/stop.

GenSet options and accessories

Engine

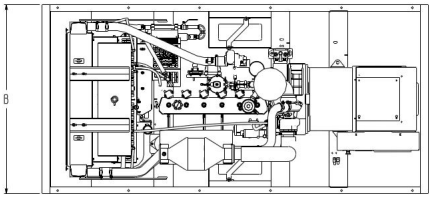
- 120/240 V, 2500 W coolant heaters
- 120 V, 400 W oil pan heater

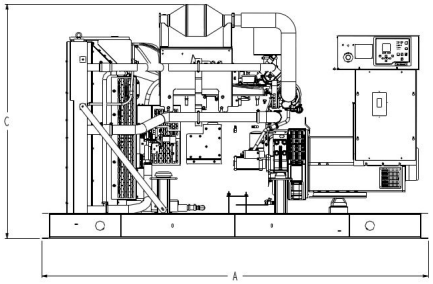
Fuel system - flexible fuel connector and fuel strainer

Exhaust system - GenSet mounted muffler (enclosure models, only)

Generator set

- PCC 3.3 MLD controls
- Batteries and battery charger
- ABB EMAX E.O. generator breaker
- Main line circuit breaker
- PowerCommand Network Input/Output (I/O) Module
- Modbus to BACnet Module
- Weather protective enclosure (F001) with silencer
- Level II enclosure w/silencer
- Audible alarm; remote drains; oil maintainer
- Remote annunciator panel and spring isolators
- Two-year standby warranty
- Five-year basic power warranty





This outline drawing is for reference only.
Do not use for installation design.

	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)
C200N6 Standby	3124 (123)	1524 (60)	1886 (74)
C200N6 Prime	4039 (159)	1524 (60)	1892 (75)

NOTE: Consult drawings for applicable weights. See enclosure Specification Sheet for enclosure dimensions.

Codes and standards

Codes and standards compliance may not be available with all model configurations - consult factory for availability.

Underwriters Laboratory (UL) is a world leader in product safety testing and certification. This GenSet is certified to UL2200 as open set, weather enclosure, and sound-attenuated enclosure configurations. The generator is certified to UL1004. The PowerCommand® Control System is certified to UL508. (See Fuel Installation Requirements on this page.)

CSA Group tests products under a formal process to ensure that they meet the safety and/or performance requirements of applicable standards. This GenSet is certified to: CSA 22.2 No. 100 Motors and Generators; CSA 22.2 No. 0.4-044 Bonding of Electrical Equipment; CSA 22.2 No. 14 Industrial Control Equipment; and CSA 22.2 No. 0 General Requirements - Canadian Electrical Code, Part II. (See Fuel Installation Requirements on this page.)

Engine is certified to Stationary Non-Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ.
Engine is certified to Mobile Non-Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ.
U.S. applications must be applied per EPA regulations.

This product has been manufactured under the controls established by a Bureau Veritas Certification approved management system that conforms to ISO 9001:2015.

Fuel installation requirements

Gas supply pressure is specified at the inlet to the fuel shut-off solenoid (FSO). If this engine is equipped with two FSOs in series, this value should be measured at the inlet to the downstream FSO. Each FSO can reduce the supply pressure up to 5" W.C. at full load. Additional options added to the fuel train such as those for CSA or UL compliance, strainers and/or flex connections can add restriction that must be considered in the site installation.

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 ISO 8528. Fuel Stop power is in accordance with ISO 3046, AS 2789, DIN 6271, and BS 5514.

Prime Power (PRP):
Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent 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 ISO 8528, ISO 3046, AS 2789, DIN 6271, and BS 5514.

Demand Response Power Rating - Spark Ignited Gas (DRP):
Applicable for supplying electrical power in parallel with commercially available power in variable and non-variable load applications. This fuel rating is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engine operation is limited to a total of 500 hours per year. Engines may be operated in parallel to the public utility for up to 500 hours per year, with an average load factor no greater than 80% of rated Demand Response Power. Engines with Standby Power ratings available can be run in Emergency Standby applications up to the Standby Power rating for up to 50 hours per year. The customer should be aware, however, that the life of any engine will be reduced by constant high load operation.

Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect GenSets to any building electrical system except through an approved device or after the building main disconnect is open. Neutral connection must be bonded in accordance with National Electrical Code.

Specifications are subject to change without notice.

Power You Can Rely On

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