



Specification sheet

Gaseous Fuel Generator Set

G8.3GC Engine Series

70 kW 60 Hz

Non-regulated



Description

The Cummins Inc. commercial Generator Set (GenSet) is a fully integrated power generation system providing optimum performance, reliability, and versatility for continuous power applications.

Features

Cummins Heavy-Duty Engine - Rugged 4-cycle industrial spark-ignited engine delivers reliable power, low emissions, and quick response to load changes.

Alternator - Several alternator sizes offer selectable motor-starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads, fault-clearing short-circuit capability, and class H insulation.

Control System - The PowerCommand® electronic control is standard equipment and provides total GenSet system integration, including automatic remote starting/stopping, precise voltage regulation, alarm and status message display, AmpSentry™ protective relay, output metering, and auto-shutdown at fault detection.

Warranty and Service - Backed by a comprehensive warranty and worldwide distributor network.

Model	Standby rating		Prime rating		Continuous rating		Data sheet	
	60 Hz kW (kVa)	50 Hz kW (kVa)	60 Hz kW (kVa)	50 Hz kW (kVa)	60 Hz kW (kVa)	50 Hz kW (kVa)	60 Hz kW (kVa)	50 Hz kW (kVa)
C70N6C					70 (88)		FR 92224	

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%
Radio Frequency Interference	Optional PMG excitation operates in compliance with BS800 and VDE level G and N. Addition of RFI protection kit allows operation per MIL-STD-461 and VDE level K.

Engine Specifications

Base Engine	Cummins Model G8.3GC
Displacement	8.3 L (504 in ³)
Overspeed Limit	2100 rpm
Regenerative Power	TBD
Cylinder Block Configuration	Cast iron with replaceable wet cylinder liners
Cranking Current	550 CCA (cold soak at -18 °C (0 °F) or above)
Battery Charging Alternator	37 amps
Battery Type	TBD
Starting Voltage	12-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
Total System Back Pressure Allowed	51 mm Hg (2 in. Hg)
Silencer Back Pressure (Factory Enclosed Units Only)	12.7 mm Hg (0.5 in. Hg)

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	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

Amp Rating at Full-load Voltage

Full Load Voltage		120/240 (1 Ph)	120/208	127/220	139/240	220/380	240/416	254/440	277/480	347/600
C70N6C	Amps	292	243	230	210	133	121	115	105	84

Fuel Consumption

Model	Fuel Type	Rated Load Fuel Consumption in Standard Cubic Feet per Hour (CFH)			
		1/4	1/2	3/4	Full
C70N6C	NG	405	677	836	1078

Fuel inlet pressure at GenSet connection: 356 to 508 mm WC (14 to 20 in. WC)

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:

Environment

- Ambient operating temperature from: -40 to +70 °C (-40 to 158 °F). HMI from -20 to +70 °C (-4 to 158 °F).
- Operating altitude up to 5000 m (13,000 ft.).

Features

- Control boards potted for environmental protection.
- 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.

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

- 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 °C (104 °F) 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).
- Color-coded graphical display of: kVa, Frequency, 3-phase current, and three-phase AC voltage
- Auxiliary output relays (2).
- Modbus[®] to BACnet™ Module.
- ComAp IntelliGen^{NTC} parallel controller.
- 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.

GenSet options and accessories

Engine

- 120/208/240 V, 1500 W coolant heater
- 120 V, 150 W lube oil heater

Alternator

- 80 °C rise
- 105 °C rise

Fuel System

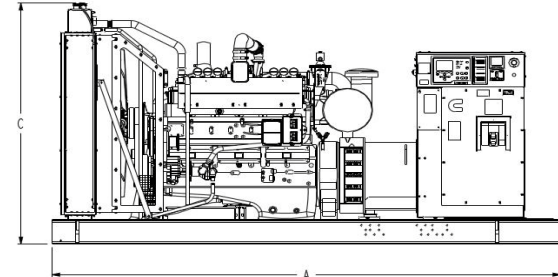
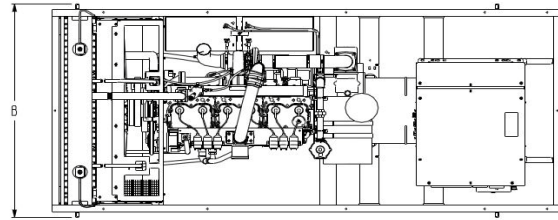
- Flexible fuel connector and fuel strainer

Exhaust System

- GenSet mounted muffler (enclosure models only)

Generator Set

- Batteries
- Battery charger
- Main line circuit breaker
- Modbus® to BACnet™ Module
- Weather protective enclosure (F001) with silencer
- Audible alarm
- Remote drains
- Oil maintainer
- Remote annunciator panel
- Spring isolators



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.)
C70N6C	2794 (110)	1016 (40)	1499 (59)

NOTE: Consult drawings for applicable weights. Contact the factory for additional information. See enclosure Specification Sheet for enclosure dimensions.

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.

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.



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



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