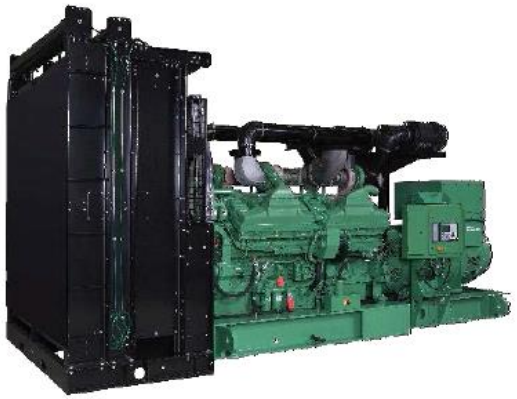
Specification sheet

Diesel generator set QSK60 series engine

2000kVA - 2500kVA 50 Hz



Description

This Cummins® commercial generator set is a fully integrated power generation system, providing optimum performance, reliability, and versatility for stationary Standby, Prime power, and Continuous duty applications.

Made by Cummins

Cummins heavy-duty engine - Rugged 4- cycle industrial diesel delivers reliable power, low emissions and fast response to load changes.

Permanent Magnet Generator (PMG) - Offers enhanced motor starting and fault clearing short circuit capability.

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-circuits capability, and class F or H insulation.

Control system – The PowerCommand® electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard integral set- mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for level 1 systems.

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

	Standby rating	Prime rating	Controller
Model	**50 Hz kVA (kW)**	**50 Hz kVA (kW)**	
C2000 D5	2063 (1650)	1875 (1500)	PC3.3
C2250 D5	2250 (1800)	2000 (1600)	PC3.3
C2500 D5A	2500 (2000)	2250 (1800)	PC3.3

Generator set specifications

Transient performance	ISO 8528-5 compliant
Voltage regulation, no load to full load	± 0.5%
Random voltage variation	± 0.5%
Frequency regulation	Isochronous
Random frequency variation	±0.25%
EMC compatibility	BS EN 61000-6-4 / BS EN 61000-6-2

Engine specifications

Design	4 cycle, V-black, turbocharged and low temperature after-cooled
Bore	158.8 mm (6.25 in)
Stroke	190.0 mm (7.48 in)
Displacement	60.2 L (3673 in^3)
Cylinder block	Cast iron, 60ºV 16 cylinder
Battery capacity	2200 amps at ambient temperature 0ºF to 32ºF (-18 °C to 0°C)
Battery charging alternator	40 amps
Starting voltage	24- volt, negative ground
Fuel system	Direct injection
Fuel filter	Triple element, spin on fuel filters with water separator
Air cleaner type	Dry replaceable element
Lube oil filter type(s)	Four spin-on, combination full flow and bypass filters
Standard cooling system	104ºF (40ºC) ambient radiator

Alternator specifications

Design	Brushless, 4 pole, drip-proof revolving field
Stator	2/3 pitch
Rotor	Direct coupled by flexible disc
Insulation system	Class H
Standard temperature rise	150°C Standby
Exciter type	PMG (Permanent Magnet Generator)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform total harmonic distortion	No load < 1.5%. Non distorting balanced linear load < 5%
Telephone influence factor (TIF)	< 50% per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 3%

Available voltages

50 Hz line – neutral / line - line

- 220/380
- 230/400
- 240/415
- 3640/6300
- 3810/6600
- 6060/10500
- 6350/11000

Generator set options

Engine

- Coolant heater
- Engine toolkit

Control panel

- Multiple language support
- 3 phase differential CTs
- User-configurable relays
- Heater control cabinet
- Digital input/output

Alternator

- Anti-condensation heater
- Stator winding temp sensor RTDs/phase

Generator set

- Batteries
- Battery charger
- Manual available in multiple languages
- Standard spring mount

Cooling system

- Remote radiator

*Note: Some options may not be available on all models – consult factory for availability.

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PowerCommand 3.3 control system

Control system

The PowerCommand control system is an integrated microprocessor based generator set control system providing voltage regulation, engine protection, alternator protection, operator interface and isochronous governing.

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.

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

Multi-language support

Operator panel features

Operator panel features – The operator panel, in addition to the alternator, displays the Utility/AC Bus data.

Operator/display functions

- 320 x 240 pixels graphic LED backlight LCD.
- Auto, manual, start, stop, fault reset and lamp test/panel lamp switches.
- Alpha-numeric display with pushbuttons.
- LED lamps indicating genset running, remote start,not in auto, common shutdown, common warning,manual run mode, auto mode and stop.

Paralleling control functions

- Digital frequency synchronization and voltage matching.
- Isochronous kW and kvar load sharing controls
- Droop kW and kvar control.
- Sync check.
- Extended paralleling (Peak Shave/Base Load).
- Digital power transfer control (AMF) provides load transfer operation in open or closed transition or soft (ramping) transfer mode

Alternator data

- Line-to-neutral and Line-to-Line AC volts.
- 3-phase AC current.
- Frequency.
- kW, kVar, power factor kVA (three phase and total).

Engine data

- DC voltage.
- Engine speed
- Lube oil pressure and temperature.
- Coolant temperature
- Comprehensive FAE data (where applicable).

Other data

- Genset model data.
- Start attempts, starts, running hours, kW hours.
- Load profile (operating hours at % load in 5% increments).
- Fault history.
- Data logging and fault simulation (requires InPower).

Standard control functions

Digital governing (optional)

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

Digital voltage regulation

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

AmpSentry AC protection

- AmpSentry protective relay.
- Over current and short circuit shutdown.
- Over current warning.
- Single and three phase fault regulation.
- Over and under voltage shutdown.
- Over and under frequency shutdown.
- Overload warning with alarm contact.
- Reverse power and reverse Var shutdown.
- Field overload.

Engine protection

- Battery voltage monitoring, protection and testing.
- Over speed shutdown.
- Low oil pressure warning and shutdown.
- High coolant temperature warning and shutdown.
- Low coolant level warning or shutdown.
- Low coolant temperature warning.
- Fail to start (over crank) shutdown.
- Fail to crank shutdown.
- Cranking lockout
- Sensor failure indication.
- Low fuel level warning or shutdown
- Fuel-in-rupture-basin warning or shutdown.
- Full authority electronic engine protection.

Control functions

- Time delay start and cool down.
- Real time clock for fault and event time stamping.
- Exerciser clock and time of day start/stop
- Data logging.
- Cycle cranking.
- Load shed.
- Configurable inputs and outputs (4).
- Remote emergency stop.

Options

- Auxiliary output relays (2).

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) isin accordance with ISO 8528. Fuel stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-Time Running Power (LTP):

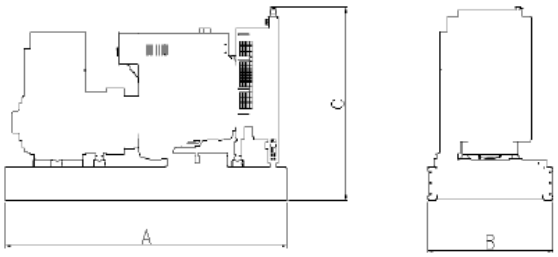
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

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) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



This outline drawing is to provide representative configuration details for Model series only.

See respective model data sheet for specific model outline drawing number.

Do not use for installation design

Model	Dim “A” mm	Dim “B” mm	Dim “C” mm	Set weight* dry kg	Set Weight* wet kg
C2000 D5	6180	2296	2537	15105	15745
C2250 D5	6180	2296	2537	15320	15960
C2500 D5A	6180	2494	3041	17065	17790

*Note: Weights represent a set with standard features. See outline drawings for weights of other configurations.

Codes and standards

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

ISO 8528

This generator set has been designed to comply with ISO 8528 regulation.

For more information contact your local Cummins distributor or visit power.cummins.com

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