



Diesel generator set QSK60 series engine

2750kVA 50 Hz
Emergency Standby
EPA emissions



Description

Cummins® commercial generator sets are fully integrated power generation systems, providing optimum performance, reliability, and versatility for stationary standby applications.

Features

Cummins® heavy-duty engine - Rugged 4-cycle industrial diesel delivers reliable power, low emissions and fast 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-circuits capability.

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

Control system - The PowerCommand® digital 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™ protective relay, output metering, auto-shutdown at fault detection.

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

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

ISO8528-5 G3 Capable - refer to factory for site and configuration specific transient performance classification.

	Standby rating	¹ Prime rating	Continuous rating	Emissions compliance	Data sheets
Model	50 Hz kVA (kW)	50 Hz kVA (kW)	50 Hz kVA (kW)	EPA	50 Hz
C2750D5BE	2750 (2200)	2500 (2000)		EPA Tier 2	D-6522

Notes: ¹ Prime rating data provided for reference.

Generator set specifications

Governor regulation	ISO 8528-5 part 1
Steady state voltage regulation, no load to full load	± 0.25%
Steady state frequency variation	± 0.25%
Frequency regulation	Isochronous
Random frequency variation	± 0.25%
EMC compatibility	Emissions to EN 61000-6-4 Immunity to EN 61000-6-2

Engine specifications

Design	4 cycle, V, turbo charged and low temperature after-cooled
Bore	158.8 mm (6.25 in)
Stroke	190 mm (7.48 in)
Displacement	60.2 litres (3673 in ³)
Cylinder block	Cast iron, V 16 cylinder
Battery capacity	1800 amps minimum at ambient temperature of -18 °C (0 °F)
Battery charging alternator	55 amps
Starting voltage	24 volt, negative ground
Fuel system	Cummins' Modular Common Rail System
Fuel filter	Two stage spin-on fuel filter and water separator system. Stage 1 has a three element, 7 micron filter and Stage 2 has a three element, 3 micron filter.
Air cleaner type	Dry replaceable element
Lube oil filter type(s)	Four spun-on, combination full flow filter and bypass filters
Cooling system	High/Enhanced ambient cooling system (shipped loose)

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Two bearing, flexible disc
Insulation system	Class H on low and medium voltage, Class F on high voltage
Standard temperature rise	150/40 °C standby
Exciter type	Permanent Magnet Generator (PMG)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform total harmonic distortion	< 5% no load to full linear load, < 3% for any single harmonic
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	• 240/416	• 1905/3300	• 3810/6600	• 6350/11000
• 230/400	• 255/440	• 3640/6300	• 6060/10500	

Note: Consult factory for other voltages.

Generator set options and accessories

Engine

- Engine Coolant Heater – Min 4C (40F) & Below 4C (40F)
- Heavy duty air cleaner (Ship loose)
- Redundant electric starting
- Lube oil make up system

Exhaust

- Residential or Industrial Grade Silencer (Inline or Side Entry)
- Bellows and fixing Kit

Control panel

- Masterless Load Demand
- Multiple language support
- Anti-condensation heater
- Exhaust Temp. Monitoring
- Annunciator panel
- User configured 6 relays
- Independent Timer
- Low Coolant Level Warning/Shutdown
- High Bearing Temp warning
- High Alt. Temp-Shutdown

Alternator

- Anti-condensation heater
- Enhanced Transient Performance.

Cooling system

- High/Enhanced ambient temperature (Ship Loose)
- Remote Cooling interface

Generator set

- Battery charger
- Oil sampling valve
- Factory witness tests
- Multiple manual language
- Set of Standard Spring Mounts

Warranty

- 2 Year Base or 3, 5 and 10 years for Standby including parts, labour and travel.

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

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PowerCommand 3.3 – 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

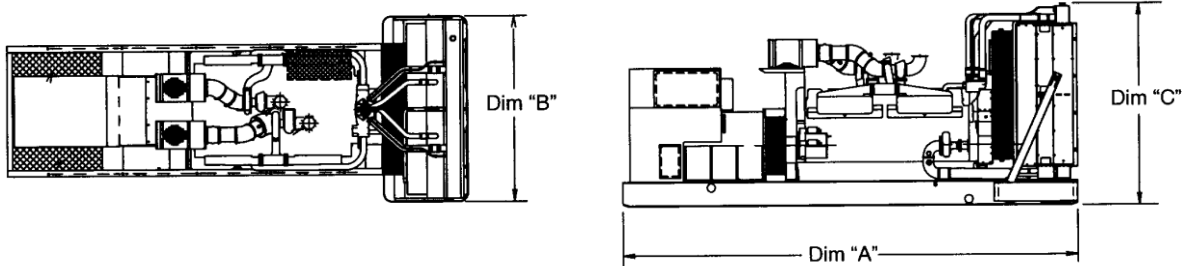
- Auxiliary output relays (2)

Ratings definitions¹

Emergency Standby Power (ESP):	Limited-Time Running Power (LTP):	Prime Power (PRP):	Base Load (Continuous) Power (COP):
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 in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	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.	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.

Notes: ¹ Rating definitions provided for reference only.

Weights and dimensions



Do not use for installation design




This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim 'C' mm (in.)	Set weight dry* kg (lbs)	Set weight wet* kg (lbs)
C2750 D5B	7108 (280)	2384 (94)	3404 (134)	23696 (52285)	24709 (54520)

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

Codes and standards

Codes may not be available with all model configurations – consult factory for availability

	<p>This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.</p>		<p>This generator set is available with CE certification subject to EU RoHS exclusion per EU 2011/65.</p>
	<p>The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.</p>	<p>ISO 8528</p>	<p>This generator set has been designed to comply with ISO 8528 regulation.</p>
		<p>U.S. EPA</p>	<p>Engine certified to Stationary Emergency U.S. EPA New Source Performance Standards, 40 CFR 60 subpart IIII Tier 2 exhaust emission levels. U.S. applications must be applied per this EPA regulation.</p>

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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

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