



Diesel Generator set 4B3.3 series engine

44 kVA – 66 kVA 50 Hz
42 kWe – 62 kWe 60 Hz
EU Stage IIIA y US EPA Tier 3



Description

Cummins® commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby and Prime Power 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 and fault clearing short-circuit capability.

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

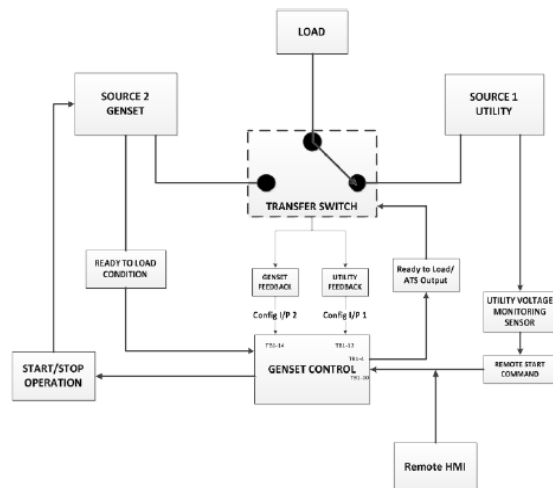
Automatic mains failure (AMF)

The built in AMF feature provides the automatic transfer and re-transfer of the load from utility to generator set and vice-versa.

- Automatically starts-stops the generator set in the event of utility failure.

- Annunciates faults.

* A utility voltage monitoring sensor (as shown in the AMF diagram above) must be connected in order to use the AMF feature on the 1302 control.



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 and auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard and enhanced integral set-mounted radiator systems, 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.

Model	Standby rating kW (kVA)	Prime rating kW (kVA)	Emissions compliance	Data sheets
C44D5E	35 (44)	32 (40)	EU Stage IIIA	D-6447
C40D6E	42 (53)	38 (48)	EPA Tier 3	D-6449
C66D5E	53 (66)	48 (60)	EU Stage IIIA	D-6448
C60D6E	62 (77)	55 (68)	EPA Tier 3	D-6451

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G2
Voltage regulation, no load to full load	± 0.5%
Random voltage variation	± 0.5%
Frequency regulation	Isochronous
Random frequency variation	± 0.25%

Engine specifications

Bore	95 mm (3.74 in.)
Stroke	115 mm (4.53 in.)
Displacement	3.3 litres (199 in ³)
Configuration	In line 4 cylinder
Battery capacity	750 Amp (CCA)
Battery charging alternator	95 Amps
Type of Injection controlling	Mechanic
Starting voltage	12 volts, negative ground
Fuel system	Direct injection
Fuel filter	Spin-on Multi-layer
Air cleaner type	Dry replaceable element
Lube oil filter type(s)	Spin-on, combination full flow filter and bypass filters
Standard cooling system	High ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Single bearing, flexible disc
Insulation system	Class H
Level of protection	IP23
Exciter type	Shunt
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform total harmonic distortion (THDV)	< 1,5% no load, < 5% for non-distorting balanced linear load
Telephone influence factor (TIF)	< 50 per NEMA MG1-22.43
Telephone harmonic factor (THF)	<2%

Available voltages

50 Hz Line-Neutral/Line-Line	60 Hz Line-Neutral/Line-Line
<ul style="list-style-type: none">• 255/440• 230/400• 220/380• 127/220	<ul style="list-style-type: none">• 277/480• 255/440• 220/380• 127/220

Note: Consult factory for other voltages.

Generator set options and accessories¹

Engine

- 220 ~ 240V thermo-statically controlled coolant heater
- Heavy duty air cleaner

Alternator

- 105 °C rise²
- 125 °C rise²
- 150 °C rise²
- 120/240 V 300 W anti-condensation heater

Control panel

- PowerCommand 1.1
- PowerCommand 3.3
- Multiple language support

Switch Gear

- ATS integrated to generator
- ATS Outside of generator(Gtec)

Exhaust system

- Residential grade exhaust silencer
- Critical grade exhaust silencer

Generator set

- Battery
- Battery charger
- Circuit breaker
- In-skid AVM
- Manual / Labels language – English, Portuguese and Spanish

Sound Attenuation

- Enclosure for 85dB
- Inlet / outlet room attenuator for:
 - 65dB
 - 75dB
 - 85dB
- Acoustic door

Remote Monitoring System

- PC500/550 remote monitoring system

Notes:

¹ Some options may not be available on all models - consult factory for availability.

² Consult the factory to see available temperature raise for each genset model.

Control System PCC 1.1



PowerCommand control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -20 °C to +70 °C

AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

Engine protection

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

Alternator data

- Line-to-line and Line-to-neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

Other data

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

Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation

- Integrated digital electronic voltage regulator
- 2-phase line-to-line sensing

Control functions

- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop

Options

- AC - Alternator
- PMG alternator excitation
- Automatic mains failure(AMF)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8) (Aux 101)
- Digital governing
- AC output analog meters (bargraph)
 - Color-coded graphical display of:
 - 3-phase AC voltage
 - 3-phase current
 - Frequency
 - kVa

Ratings definitions

Emergency Standby Power (ESP):

Applicable for supplying power to varying electrical loads 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.

Limited-Time Running Power (LTP):

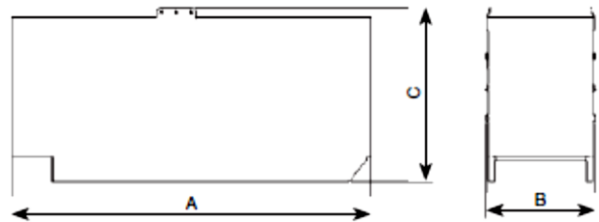
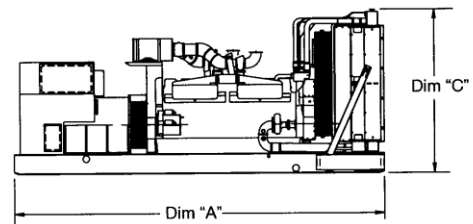
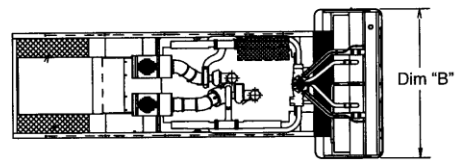
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

Prime Power (PRP):

Applicable for supplying power to varying electrical loads 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.



These outlines drawings are for reference only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design

Open Set model	Dim "A" mm	Dim "B" mm	Dim "C" mm	Set weight* dry kg	Set weight* wet kg
C44D5E	1970	967	1485	854	874
C40D6E	1970	967	1485	812	832
C40D6E/1	1970	967	1485	859	879
C66D5E	1970	967	1485	901	921
C60D6E	1970	967	1485	859	879


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

Enclosure model	Dim "A" mm	Dim "B" mm	Dim "C" mm	Set weight* dry kg	Set weight* wet kg
C44D5E	2428	1031	1690	1162	1182
C40D6E	2428	1031	1690	1120	1140
C40D6E/1	2428	1031	1690	1166	1186
C66D5E	2428	1031	1690	1208	1228
C60D6E	2428	1031	1690	1166	1186

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

Codes and standards

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

	<p>This product designed and manufactured in facilities certified to ISO 9001 and ISO 14001</p>	<p>ISO 8528</p>	<p>Reciprocating internal combustion engine driven generating sets</p>
<p>ISO 3046</p>	<p>Reciprocating Internal Combustion Engines</p>	<p>IEC 60034</p>	<p>Rotating electrical machines</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

Our energy working for you.™

