

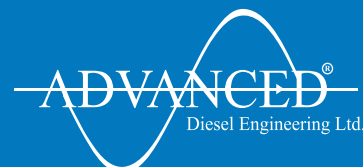
Diesel Generator set QSX15 series engine



> Specification sheet

450kVA - 550kVA 50Hz

410kW - 500kW 60Hz



Description

This Cummins® Power Generation 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.



This generator set is available with CE certification.

2000/14/EC

All enclosed products are designed to meet or exceed EU noise legislation 2000/14/EC step 2006.

ISO8528

This generator set has been designed to comply with ISO8528 regulation.



This generator set is designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.

EMISSIONS
COMPLIANCE

This generator set conforms to EU Stage II emissions regulation

Features

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 H insulation.

Control System - Standard PowerCommand® electronic control provides total system integration including remote start/stop, precise frequency and voltage regulation, alarm and status message display, AmpSentry protection, output metering, auto-shutdown.

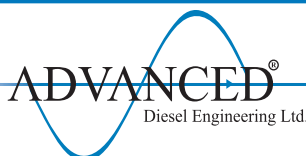
Cooling System - Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

Enclosures - Optional weather-protective and sound-attenuated enclosures are available.

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

| Model | Standby Rating | | Prime Rating | | Emissions Compliance | Datasheet | |
|---------|------------------|------------------|------------------|------------------|----------------------|-----------|-----------|
| | 50Hz kVA (kW) | 60Hz kW (kVA) | 50Hz kVA (kW) | 60Hz kW (kVA) | | 50Hz | 60Hz |
| C500 D5 | 500 (400) | N/A | 450 (360) | N/A | 4g/EU Stage II | DS28-CPGK | N/A |
| C550 D5 | 550 (440) | N/A | 500 (400) | N/A | 4g/EU Stage II | DS29-CPGK | N/A |
| C450 D6 | N/A | 450 (563) | N/A | 410 (513) | N/A | N/A | DS74-CPGK |
| C500 D6 | N/A | 500 (625) | N/A | 450 (563) | N/A | N/A | DS75-CPGK |

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Generator Set Specifications

| | |
|--|-----------------------------------|
| Governor Regulation Class | ISO8528 G2 |
| Voltage Regulation, No Load to Full Load | ± 1% |
| Random Voltage Variation | ± 1% |
| 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, in-line, Turbo Charged, Air-cooled |
| Bore | 137 mm (5.39 in.) |
| Stroke | 169 mm (6.65 in.) |
| Displacement | 15 liter (912 in.3) |
| Cylinder Block | Cast iron, 6 cylinder |
| Battery Capacity | 100 A/hr |
| Battery Charging Alternator | 35 amps |
| Starting Voltage | 24 volt, negative ground |
| Fuel System | Direct injection |
| Fuel Filter | Spin on fuel filters with water separator |
| Air Cleaner Type | Dry replaceable element with restriction indicator |
| Lube Oil Filter Type(s) | Spin on full flow filter |
| Standard Cooling System | 122°F (50°C) ambient radiator |

Alternator Specifications

| | |
|---------------------------------------|--|
| Design | Brushless single bearing, revolving field |
| Stator | 2/3 pitch |
| Rotor | Single bearing, flexible disc |
| Insulation System | Class H |
| Standard Temperature Rise | 125 - 163°C Standby |
| Exciter Type | Self Excited |
| 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) | <2% |

Available Voltages

| 50Hz Line – Neutral / Line – Line | 60Hz Line – Neutral / Line – Line |
|--|--|
| <ul style="list-style-type: none"> • 277/480 • 254/440 • 240/416 • 230/400 | <ul style="list-style-type: none"> • 220/380 • 127/220 • 115/200 • 110/190 |

Generator Set Options

- Engine
- Heavy Duty air filter
 - Water jacket heater 220/240 v

- Cooling
- Antifreeze 50/50 (Ethylene glycol)

- Enclosure
- Sound attenuated canopy

- Alternator
- Alternator heater
 - Exciter voltage regulator (PMG)

- Control Panel
- PCC3201
- 4 pole Main Circuit Breaker

- Warranty
- 5 years for Standby application
 - 2 years for Prime application
- Silencer
- 9 dB attenuation critical silencer
 - 25 dB residential - delivered loose

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Control System – PCC2100

The PowerCommand™ 2100 Control is a microprocessor-based generator set monitoring, and control system.

The control provides an operator interface to the genset, digital voltage regulation, digital governing and generator set protective functions.

The PowerCommand™ 2100 generator set control is suitable for use on a wide range of generator sets in nonparalleling applications.

The PowerCommand™ Control can be configured for any frequency, voltage and power connection configuration from 120 to 600VAC for 50Hz or 60Hz operation.

Power for the control is derived from the generator set starting batteries. The control functions over a voltage range from 8VDC to 35VDC.

Major Features

- 12 or 24 VDC Battery Operation.
- Digital Engine Speed Governing (optional) to provide isochronous frequency regulation.
- Digital Voltage Regulation with 3-phase sensing.
- AmpSentry™ Protection for true alternator overcurrent protection.
- Digital AC Output Metering with Optional Analog Metering.
- Battery Monitoring System to sense and warn against a weak battery condition.
- Digital Alarm and Status Message Display.
- Generator set Monitoring: Displays status of all critical engine and alternator generator set functions.
- Smart Starting Control System: Integrated fuel ramping to limit black smoke and frequency overshoot.

Control System

Includes all functions to locally or remotely start and stop, and protect the generator set.

Control Switch - RUN/OFF/AUTO

OFF Mode - the generator set is shut down and cannot be started.

RUN mode the generator set will execute its start sequence.

AUTO mode, the generator set can be started with a start signal from a remote device.

LED Indicating Lamps – includes LED indicating lamps for the following functions:

- Generator set running
- Not-in-auto mode
- Common warning
- Five LED indicating lamps that are configurable for colour and function
- Low oil pressure warning
- High engine temperature warning
- Low oil pressure shutdown
- Overspeed shutdown
- Fail to start
- Emergency Stop Switch. Immediate shut down of the generator set on operation.

Base Engine Protection

- Overspeed shutdown
- Low Oil Pressure Warning / Shutdown
- High Engine Temperature Warning / Shutdown
- Underspeed / Sensor Fail Shutdown
- Fail to Start / Fail to Crank
- Low / high battery voltage

Options

- Analog AC Metering Panel
 - Key Type Mode Selector Switch
 - Exhaust Temperature Monitoring
 - PowerCommand Network
 - CAN Engine Interface (Optional on Some Models)
- Refer to the PowerCommand Controls Technical Bulletin for detailed information (S1409d)



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

Limited-Time running Power (LTP):

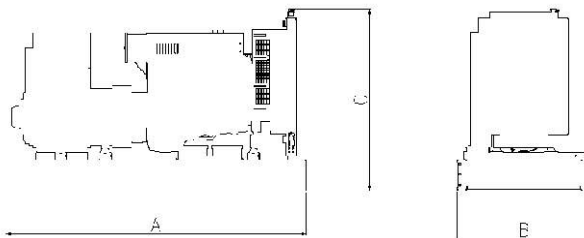
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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 |
|---------|------------|------------|------------|--------------------|--------------------|
| C500 D5 | 3433 | 1500 | 2065 | 4117 | 4022 |
| C550 D5 | 3433 | 1500 | 2065 | 4125 | 4220 |
| C450 D6 | 3433 | 1500 | 2065 | 4117 | 4022 |
| C500 D6 | 3433 | 1500 | 2065 | 4125 | 4220 |

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

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