

Diesel Generator set KTA50 series engine



> **Specification sheet**
1000kVA – 1675kVA 50Hz

Our energy working for you.™



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.

Made by Cummins Power Generation

Cummins Power Generation commercial diesel generator sets integrate the universal design, production and testing standard of Cummins, providing fully reliable and integrated power generation systems with optimum performance for applications in standby power, prime power and continuous operation.

In accordance with the standard of ISO8528-2005 and GB/T2820-2009 AC Generator Sets Driven by Reciprocating Internal Combustion Engine.

Certified to ISO9001 and ISO9002 for generator set design and manufacture.

Cummins provides full quality assurance and is responsible for the warranty of generator sets including engine, alternator and control system.

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.

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

Genset Model

| Genest Model | Standby Rating | | Prime Rating | | Engine Model | Alternators Model | Genset Controller |
|--------------|----------------|-----------|--------------|----------|--------------|-------------------|-------------------|
| | 50Hz/kVA | 50Hz /kWe | 50Hz/kVA | 50Hz/kWe | | | |
| C1675 D5A | 1675 | 1340 | 1500 | 1200 | KTA50 GS8 | P7D | PC3.3 |
| C1675 D5 | 1675 | 1340 | 1400 | 1120 | KTA50 G8 | P7D | PC3.3 |
| C1400 D5 | 1400 | 1120 | 1250 | 1000 | KTA50 G3 | P7B | PC3.3 |

Our energy working for you.™

www.cumminspower.com

© 2012 Cummins Power Generation Inc. All rights reserved. "Cummins Power Generation" and "Cummins" are registered trademarks of Cummins.

"PowerCommand" is the registered trademark of Cummins Power Generation. "Our energy working for you.™" is the trademark of Cummins Power Generation. Specifications are subject to change without notice. EA_S_CC_29 V1(2014/01) export only



Generator Set Specifications

| | |
|--|------------------------------|
| Governor Regulation Class | ISO8528 |
| 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 EN61000-6-4 / EN61000-6-2 |

Engine Specifications

| | |
|-----------------------------|--|
| Design | 4 cycle, in line, turbo Charged and after-cooled |
| Bore | 158.8mm (6.25in.) |
| Stroke | 158.8mm (6.25in.) |
| Displacement | 50 liter (3067 in3) |
| Cylinder Block | V16 engine, direct injection, four-cycle diesel engine |
| Battery Capacity | 1800 amps at ambient temperature 32°F (0°C) |
| Battery Charging Alternator | 55 amps |
| Starting Voltage | 24-volt, negative ground |
| Fuel System | Direct injection |
| Fuel Filter | Dual spin on paper element fuel filters with standard water separator. |
| Air Cleaner Type | Dry replaceable element |
| Lube Oil Filter Type(s) | Spin-on paper element full flow and bypass lube oil filters. |
| Standard Cooling System | 104°F (40°C) 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) | TIF <50 Per NEMA MG1-22.43 |
| Telephone Harmonic Factor (THF) | < 2% |

Generator Set Options

Engine

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

Battery

- Battery
- 240V-5A Battery charger

Alternator

- Alternator heater
- Stator temperature sensor
- Rotor temperature sensor

Breaker

- 3 pole main circuit breaker
- 4 pole main circuit breaker

Silencer

- 25 dB residential - delivered loose

Warranty

- 5 years for Standby application
- 2 years for Prime application

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

Our energy working for you.™

www.cumminspower.com

© 2012 Cummins Power Generation Inc. All rights reserved. "Cummins Power Generation" and "Cummins" are registered trademarks of Cummins.

"PowerCommand" is the registered trademark of Cummins Power Generation. "Our energy working for you.™" is the trademark of Cummins Power Generation. Specifications are subject to change without notice. EA_S_CC_29 V1(2014/01) export only



Control System- PowerCommand® 3.3

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).



PowerCommand© 3.3 control operator/ display panel

Our energy working for you.™

www.cumminspower.com

© 2012 Cummins Power Generation Inc. All rights reserved. "Cummins Power Generation" and "Cummins" are registered trademarks of Cummins.

"PowerCommand" is the registered trademark of Cummins Power Generation. "Our energy working for you.™" is the trademark of Cummins Power Generation. Specifications are subject to change without notice. EA_S_CC_29 V1(2014/01) export only



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):

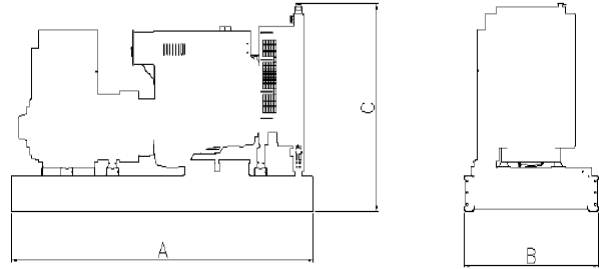
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN6271 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, AS2789, 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* |
|-----------|------------|------------|------------|--------------------|-------------|
| C1400 D5 | 5105 | 2000 | 2238 | 9099 | 10075 |
| C1675 D5 | 5690 | 2033 | 2330 | 10324 | 10626 |
| C1675 D5A | 5690 | 2033 | 2330 | 10324 | 10626 |

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

Cummins Power Generation East Asia
2 Rongchang East Street,
Beijing Economic-Technological Development Area
Beijing 1000176 P.R China
 Phone: +86 10 5902 3000
 Fax: +86 10 5902 3199