Diesel Generator set
KTA38 series engine

> Specification sheet
900-1250 kVA 50Hz

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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.

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.

<table>
<thead>
<tr>
<th>Genest Model</th>
<th>Standby Rating</th>
<th>Prime Rating</th>
<th>Engine Model</th>
<th>Alternators Model</th>
<th>Genset Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1000 D5</td>
<td>1062 50Hz/kVA</td>
<td>850 50Hz/kWe</td>
<td>KTA38-G5</td>
<td>HCI634J</td>
<td>PC3.3</td>
</tr>
<tr>
<td>C1100 D5B</td>
<td>1132 50Hz/kVA</td>
<td>906 50Hz/kWe</td>
<td>KTA38-G5</td>
<td>HCI634K</td>
<td>PC3.3</td>
</tr>
<tr>
<td>C1250 D5A</td>
<td>1250 50Hz/kVA</td>
<td>1000 50Hz/kWe</td>
<td>KTA38-G9</td>
<td>PI734A</td>
<td>PC3.3</td>
</tr>
</tbody>
</table>
Generator Set Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor Regulation Class</td>
<td>ISO8528 G2</td>
</tr>
<tr>
<td>Voltage Regulation, No Load to Full Load</td>
<td>1%</td>
</tr>
<tr>
<td>Random Voltage Variation</td>
<td>1%</td>
</tr>
<tr>
<td>Frequency Regulation</td>
<td>±0.25%</td>
</tr>
<tr>
<td>Random Frequency Variation</td>
<td></td>
</tr>
<tr>
<td>EMC Compatibility</td>
<td>EN61000-6-4 / EN61000-6-2</td>
</tr>
<tr>
<td>Radio Frequency Emission Compliance</td>
<td>IEC 801.2 through IEC 801.5 MIL STD 461C Part 9</td>
</tr>
</tbody>
</table>

Engine Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>4 cycle, in line, turbo Charged and after-cooled</td>
</tr>
<tr>
<td>Bore</td>
<td>159mm (6.25in.)</td>
</tr>
<tr>
<td>Stroke</td>
<td>159mm (6.25in.)</td>
</tr>
<tr>
<td>Displacement</td>
<td>38 liter (2300in.3)</td>
</tr>
<tr>
<td>Cylinder Block</td>
<td>Twelve-cylinder vee formation, direct injection, four-cycle diesel engine</td>
</tr>
<tr>
<td>Battery Capacity</td>
<td>890 amps at ambient temperature 32°F (0°C)</td>
</tr>
<tr>
<td>Battery Charging Alternator</td>
<td>55 amps</td>
</tr>
<tr>
<td>Starting Voltage</td>
<td>24-volt, negative ground</td>
</tr>
<tr>
<td>Fuel System</td>
<td>Direct injection</td>
</tr>
<tr>
<td>Fuel Filter</td>
<td>Dual spin on paper element fuel filters with standard water separator.</td>
</tr>
<tr>
<td>Air Cleaner Type</td>
<td>Dry replaceable element</td>
</tr>
<tr>
<td>Lube Oil Filter Type(s)</td>
<td>Spin-on paper element full flow and bypass lube oil filters.</td>
</tr>
<tr>
<td>Standard Cooling System</td>
<td>104°F (40°C) ambient radiator</td>
</tr>
</tbody>
</table>

Alternator Specifications

<table>
<thead>
<tr>
<th>Available Voltages</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>50Hz</td>
<td></td>
</tr>
<tr>
<td>• 110/190</td>
<td>• 220/380</td>
</tr>
<tr>
<td>• 115/200</td>
<td>• 230/400</td>
</tr>
<tr>
<td>• 120/208</td>
<td>• 240/416</td>
</tr>
<tr>
<td>• 127/220</td>
<td>• 255/440</td>
</tr>
</tbody>
</table>

*Derate may be applicable at this voltage. Please consult the factory for details.

Generator Set Options

<table>
<thead>
<tr>
<th>Engine</th>
<th>Alternator</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Heavy Duty air filter</td>
<td>• Alternator heater</td>
<td>• 10 years for Major components</td>
</tr>
<tr>
<td>• Water jacket heater 220/240 v</td>
<td></td>
<td>• 5 years for Standby application</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 2 years for Prime application</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cooling</th>
<th>Control Panel</th>
<th>Silencer</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Antifreeze 50/50 (Ethylene glycol)</td>
<td>• 3 pole Main Circuit Breaker</td>
<td>• 25 dB residential - delivered loose</td>
</tr>
<tr>
<td></td>
<td>• 4 pole Main Circuit Breaker</td>
<td></td>
</tr>
</tbody>
</table>

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

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www.cumminspower.com
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) yes
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.

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<table>
<thead>
<tr>
<th>Model</th>
<th>Dim “A” mm</th>
<th>Dim “B” mm</th>
<th>Dim “C” mm</th>
<th>Set weight* dry kg</th>
<th>Set weight* wet kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1000 D5</td>
<td>4374</td>
<td>1785</td>
<td>2229</td>
<td>7667</td>
<td>8057</td>
</tr>
<tr>
<td>C1100 D5</td>
<td>4374</td>
<td>1785</td>
<td>2229</td>
<td>7960</td>
<td>8350</td>
</tr>
<tr>
<td>C1250 D5A</td>
<td>4722</td>
<td>1785</td>
<td>2241</td>
<td>8179</td>
<td>8569</td>
</tr>
</tbody>
</table>

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

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