



Diesel Generator Set

QSK50 Series

1750-1825kVA



Reliable and Durable

Cummins® 'QSK50 series' diesel engine is a V 16 cylinder engine with a 50 litre displacement. Cummins heavy-duty engine, Robust Platform - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes. High pressure fuel pump, Modular Common Rail fuel System (MCRS) and state of the art integrated electronic control system provide superior diagnostics. Enhanced reliability of the engine through a more powerful filtration system. This Quantum series utilizes sophisticated electronics and premium engineering to provide outstanding performance levels, reliability and versatility. Each component has been specifically developed and rigorously tested for G-Drive products, ensuring high performance, durability and reliability.

Unmatched Warranty

Cummins® 'QSK50 series' diesel engine generating sets are a truly cost effective solution to long term power need backed by industry best, 2 years / 5000 hrs warranty for Prime Rated Gensets and 2 years / 1000 hrs (500 hrs/ year) for Standby Rated Gensets.

Cummins Advantage

Special features of Cummins® 'QSK50 series' engines like full authority electronic injection, low temperature aftercooler, optimised turbocharging and precision injection timing make these engines the ultimate in exceptional fuel efficiency all across the operating range.

Single Source Power Assurance

Design, manufacture and testing of engine, alternator and other accessories is done by Cummins Group of companies for optimum performance and is backed by a countrywide product support network with a single source responsibility for the entire package.

Standard Scope

Engine: Cummins® 'QSK50 series' direct injection, water cooled engine, 16 cylinder, 4 stroke, rated at 1500 RPM, conforming to ISO 3046 / IS 13018 has the following specifications:

- Cummins Full Authority electronics
- Cummins MCRS - Fuel System
- Cummins turbocharger, pulse tuned exhaust manifold, stainless steel exhaust flexible connections (2 Turbos)
- Plate type lube oil coolant inhibitor
- Outboard aftercoolers
- Full flow paper element filters - fuel, lube oil
- Dry type replaceable paper element air cleaner with restriction indicator
- Flywheel housing & flywheel to suit single / double (optional) bearing alternator
- Starting motor – Electric
- Battery charging alternator
- Cummins PowerCommand® microprocessor based genset controller
- First fill of lube oil and coolant

Alternator: Stamford brushless alternator

- Separately excited, self-regulated
- Salient pole revolving field
- Single / double bearing
- VPI epoxy impregnated insulation technology
- Re-greasable deep groove Single bearing
- Excitation - PMG based brushless

Accessories:

- Silencer suitably optimized to reduce noise
- Sturdy base rail
- 990 ltrs. free standing fuel tank
- Batteries with connecting leads and terminals

Optionals

Engine: PHE, No Cool

Alternator: Space heater, RTDs (Std. for HT), BTDs, Double Bearing

Control Panel: PC3.3- Bargraph for PC3.3 Panel with kW, Power factor, Frequency, Current, Voltage - Remote HMI AMF control panel, Battery charger, Remote/Auto start panel, Auto/Manual synchronizing panel, Audio/Visual annunciation for faults, Auxiliary Output relays

Control panel: PowerCommand® PC 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 function which are matched to the alternator provided.

Power management – Control function provides battery monitoring, testing and a smart starting control system.

Advanced control methodology – Three phase sensing, FET based full wave rectified voltage regulation and 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 – For reliable operations in harsh environment.

Multi-language support**Independent of PC/ laptop for setting up****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 with bar graph for displaying electrical parameters
- 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
- Coolant temperature/ low level
- 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**

- 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

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/ dump as per configurable priority
- Configurable inputs and outputs (4)
- Remote emergency stop

Options

- Auxiliary output relays (2)

Technical Data**Generator set specification**

| | |
|------------------------------|----------------------------------|
| Model | C1750D5P (Rad)/ C1825D5P (HE) |
| Rating | Prime |
| Power Rating kVA/Kwe | 1750/ 1400 (Rad) 1800/ 1440 (HE) |
| Output Voltage and Frequency | 415 Volts- 50 Hz |
| Power Factor | 0.8 (lag) |
| No. of phases | 3 |

Engine specifications

| | |
|--|------------------------------------|
| Make | Cummins |
| Model | QSK 50 G10 |
| No. of cylinders | 16 'Vee' |
| Aspiration | Turbocharged-Aftercooled |
| Bore and Stroke | 159 mm x 159 mm |
| Displacement | 50 liters |
| Output | 2000 BHP (1491KWm) |
| Fuel consumption @ 75% load | 257 lph (HE) |
| Fuel consumption @ 100% load | 341 lph (HE) |
| Total wet weight (DG Set- Open) | Max 10709 kgs |
| Length x Width x Height (DG set- Open) | 6115 mm X 2167 mm X 2483 mm |
| Compression Ratio | 15:1 |
| Piston Speed | 7.95 m/s |
| Governor / Class | Electronic/A1 |
| Lubricating oil sytem capacity | 235 liters |
| Coolant capacity (Engine only) | 140.1 lits. |
| Combustion air intake @100 % load (+/- 5%) | 4017 cfm / 114 m ³ /min |
| Fan air flow across radiator | RTF |
| Exhaust Temperature | 484.4 °C |

Alternator specifications

| | |
|-------------------------------|--|
| Make | Stamford-LT |
| Frame size / Model No. | PI734E |
| Voltage Regulation | + 0.5% |
| Insulation | Class H |
| Standard Enclosure | IP 23 |
| Winding Pitch | 2 / 3 Pitch |
| Stator Winding | Double Layer lap, form wound |
| Rotor | Dynamically balanced with grade 2.5 |
| Wave form distortion | No load 1.5% non-distorting, balanced linear load <5% |
| Telephone interference Factor | Better than 50 |
| Total Harmonic Factor | Better than 2% |

*- With External Cooling system

RTF- Refer to Factory

Conformance standards

IS 4722, BS 5000, IS 1460, ISO 8528, ISO 13018, ISO 3046

Rating definitions

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.

Standby power: Applicable for supplying power to varying electrical load for duration of power interrupting 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 ISO 13018.

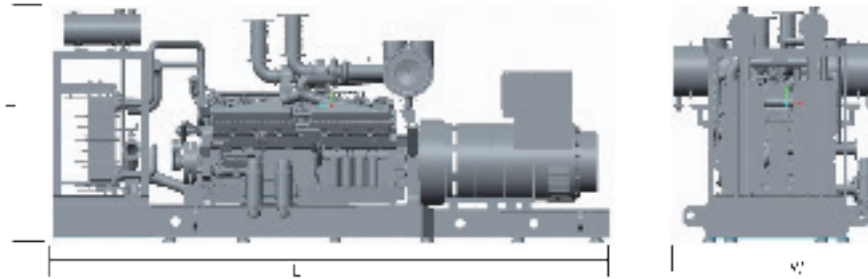
- Fuel consumption data is based on diesel having specific gravity of 0.85 and conforming to IS:1460

- Fuel consumption tolerance is +5%

Typical Enclosed Genset Dimensions

| Genset Model | Rating (kVA) | Length (mm) | Width (mm) | Height (mm) | Wet Weight ^{##} (kg) | Standard Fuel Tank Capacity - External |
|------------------------|--------------|-------------|------------|-------------|-------------------------------|--|
| C1750D5P/ C1825D5P* | 1750/1825 | 6115 | 2167 | 2483 | 12543 | 990 |

^{##} Approximate Weight



Authorised Representative

Cummins Power Systems Offices

- Bengaluru: Tel.: (080) 2325 9161 / 63, 2325 9165 / 67
Fax: (080) 2325 9164
- Chandigarh: Tel.: (0172) 224 0371-73
Fax: (0172) 224 0372
- Chennai: Tel.: (044) 2446 8110 / 2446 8113
Fax: (044) 2491 1120
- Gurgaon: Tel.: (0124) 391 0900-01
Fax : (0124) 391 0916
- Hyderabad: Tel.: (040) 2340 9970 / 2340 9980
Fax. (040) 2340 9990
- Jaipur: Tel.: (0141) 236 4944
Fax: (0141) 403 8794
- Kolkata: Tel.: (033) 2287 8065 / 2287 2481
Fax: (033) 2290 3839
- Lucknow: Tel.: (0522) 230 5049 / 230 5059
Fax: (0522) 230 5035
- Mohali: Tel.: (0172) 224 0371 / 72 / 73
Fax: (0172) 224 0371 / 72 / 73
- Vadodara: Tel.: (0265) 233 0627 / 3053627
Fax: (0265) 234 0623



Visit our facebook page at :
Cummins Power Generation India

“Our energy working for you.”



Cummins is registered trademarks of Cummins Inc.
Specifications are subject to change without notice.
PSBU/021/QSK50 1750-1825kVA/HD/MP/Revision-3 (07/2018)



**Cummins India Limited
Power Systems Business**
Cummins India Office Campus
Tower-A, 8th Floor, S. No. 21,
Balewadi, Pune – 411 045 (India)

Email: cpgindia@cummins.com
www.cumminsindia.com