## Power of One ${ }^{\mathrm{m}}$

Fully integrated, reliable \& efficient


# Powering the world, meeting customer needs, building relationshipsthis is Cummins Power Generation 

Cummins Power Generation India is the leading manufacturer and market leader of diesel fuel power systems. It is a single window provider of complete power solutions offering top-of-the-line products (diesel and gas) and services. Cummins Power Generation India provides total power solutions, right from design to execution and operations to service support.

Cummins Power Generation has the expertise to successfully meet the power requirements of a wide range of individual and institutional customers. Important sectors for power generation solutions are Telecom, Construction, IT/ITES, Realty, Hospitality, Textiles, Auto \& Auto Ancillaries, Food Processing, Data Center, Infrastructure, Pharma and Manufacturing sector.

## Fully integrated- reliable- efficient

Cummins Power Generation specializes in the design and manufacture of pre-integrated generator sets, transfer switches, paralleling equipment and controls for use in standby, prime and continuous rated systems. All major components - the engine, alternator and control systems - are manufactured by Cummins entities. This integral approach means each element of the generator set is designed to work in harmony right from the start.

## The Power of One ${ }^{\text {m" }}$

Cummins Power Generation brings you the Power of One ${ }^{\text {m"w }}$, which guarantees simple installation and minimal problems during commissioning and maintenance. This means
pre-integrated design rather than having the engine, alternator, controls and transfer switches, all from different manufacturers. The Power of One ${ }^{\text {m" }}$ ensures that you get the added benefit of components created to work together- designed, built, pre- integrated and serviced by Cummins Power Generation for Reliability, Optimum system performance and Minimum system cost.

Pre-integrated design offers advantages for Consulting specifying engineers, Building owners, Facility managers, Electrical contractors and Electrical consultants.

## Integrated products and services

- Diesel generator sets, from 7.5 to 3000 kVA

■ Natural gas generator sets, from 40 kW to 2000 kWe

- Producer Gas, Bio Gas and Coal Bed Methane Generator from 25 kW to 2000 kWe
- PowerCommand ${ }^{\oplus}$ digital control electronics for system paralleling, remote operation and monitoring
■ Automatic Transfer Switches form 40 A to 4000 A and Power Quality products
- Power Factor Correction (RTPFC) products from 125 kVAR to 2250 kVAR
■ 75 dBa environment-friendly acoustic enclosures manufactured as per CPCB norms and other critical accessories
- Design consulting and project management
- Turnkey power plant design
- Installation and commissioning
- O\&M Contracts


## Diesel Generator sets

Cummins powered diesel generator sets are available in sizes ranging from 7.5 to 3000 kVA . Whether your application is for prime or continuous power, or if reliable standby power is critical to your business, we provide standard features. Heavy- duty Cummins engines are known for fuel efficiency, responsive transient performance and rugged reliability. Each generator set includes a cooling system that is designed to provide guaranteed performance in high ambient temperatures, so you get all the power you pay for. High performance Cummins manufactured alternators offer optimum performance in demanding applications, such as data centers and industrial plants.

User-friendly operation and maintenance features include:

- Heavy-duty engines and high performance alternators
■ Mechanical and electronic governing systems and electronic voltage regulation
■ Optional control systems for automatic, local or remote-start synchronizing applications
- Weather-protective and sound attenuated enclosures, coolant heaters and other features to enhance performance and reliability in extreme ambient environments
■ Complete set of accessory devices designed for use with the generator set to simplify installation and enhance reliability



## ' X ' series ( 7.5 to 25 kVA )

The Cummins ' $X$ ' series ready-to-use generator sets with 2 cylinder ( $7.5-15 \mathrm{kVA}$ ) and 3 cylinder (20-25 kVA) inline configuration diesel engines are the most compact, smaller foot print, light weight and easy to service. Built-in vibration mounts, a completely wired control system including engine protection, instrumentation, residential silencer, heavy-duty air cleaner fuel tank constitute its special features. These generator sets have CPCB certified emission compliance, thus offering environment-friendly power. Engines in this series are naturally aspirated, fuel efficient and have low lube oil consumption.

| Generator <br> set model | Engine <br> model | BHP rating <br> at 1500 RPM | kVA <br> (Prime) | Bore <br> (mm) | Stroke <br> $(\mathbf{m m})$ | Disp. <br> (Itrs) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| C 7.5 D5 | X1.3 G2 | 15.78 | 7.5 | 95 | 91 | 1.29 |
| C 10 D5 | X1.3 G2 | 15.78 | 10 | 95 | 91 | 1.29 |
| C 15 D5 P | X1.7 G1 | 20 | 15 | 91.44 | 127 | 1.7 |
| C 20 D5 P | X2.5 G2 | 32 | 20 | 91.44 | 127 | 2.5 |
| C 20 D5 P | X2.5 G2 | 32 | 25 | 91.44 | 127 | 2.5 |



## 'S' series ( $\mathbf{3 0}$ to $\mathbf{6 2 . 5} \mathbf{~ k V A )}$

The 'S' series are 4 cylinder naturally aspirated, turbocharged and after cooled models. Engines in this series are simple, compact, reliable, fuel efficient exhibiting minimal noise and vibration levels.

| Generator <br> set model | Engine <br> model | BHP rating <br> at 1500 RPM | kVA <br> (Prime) | Bore <br> $(\mathbf{m m})$ | Stroke <br> (mm) | Disp. <br> (Itrs) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| C 30/35 D5 P | 3.8 G3 | 45 | $30 / 35$ | 97 | 128 | 3.8 |
| C 40 D5 P | S 3.8 G4 | 58 | 40 | 97 | 128 | 3.8 |
| C 50 D5 P | S 3.8 G6 | 69 | 50 | 97 | 128 | 3.8 |
| C 62.5 D5 P | 3.8 G7 | 80 | 62.5 | 97 | 128 | 3.8 |



## 'B' series (75 to 160 kVA)

The ' B ' series 6 cylinder inline configuration engines are light weight, easy to service with fewer parts leading to lower maintenance cost.

| Generator <br> set model | Engine <br> model | BHP rating <br> at 1500 <br> RPM | kVA <br> (Prime) $)$ | Bore <br> $(\mathbf{m m})$ | Stroke <br> $(\mathbf{m m})$ | Disp. <br> (ltrs) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| C 75/82.5 D5 P | 6 BT 5.9 G1 | 105 | $75 / 82.5$ | 102 | 120 | 5.88 |
| C 100 D5 P | 6 BTA 5.9 G5 | 124 | 100 | 102 | 120 | 5.88 |
| C 125 D5 P | 6 BTAA 5.9 G3 | 154 | 125 | 102 | 120 | 5.88 |
| C 140 D5 P | 6 BTAA 5.9 G4 | 170 | 140 | 102 | 120 | 5.88 |
| C 160 D5 P | 6BTAA 5.9 G5 | 195 | 160 | 102 | 120 | 5.88 |



## 'C' series (180 to 250 kVA)

The ' C ' series 6 cylinder inline configuration engines with 'unitized' block design have been developed to exhibit high levels of durability and reliability. This combined with high power to weight ratio and small footprints make the ' C ' series engine powered generator sets the obvious choice for mission critical power needs.

| Generator <br> set model | Engine <br> model | BHP rating <br> at 1500 <br> RPM | kVA <br> (Prime) | Bore <br> $(\mathbf{m m})$ | Stroke <br> $(\mathbf{m m})$ | Disp. <br> (Itrs) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| C 180 D5 P | 6 CTA 8.3 G2-1 | 220 | 180 | 114 | 135 | 8.3 |
| C 200 D5 P | 6 CTA 8.3 G1-1 | 245 | 200 | 114 | 135 | 8.3 |
| C 250 D5P | 6 CTA 8.3 G4 | 310 | 250 | 114 | 135 | 8.3 |



## ' N ' series ( $\mathbf{3 2 0}$ and $\mathbf{3 8 0} \mathbf{k V A )}$

The ' $N$ ' series 6 cylinder, inline engines are simple in design and are available in both turbocharged and turbocharged - after cooled versions. Engines in this series are the real workhorses which have clocked millions of hours, operating in some of the world's most demanding applications and climatic conditions. These engines are available with advancements like; pulse tuned manifold, low temperature after cooling and large capacity gear pump for pressure lubrication. Large volume coolant passages provide an even flow of coolant. All these contribute to higher thermal efficiency and durability.

| Generator <br> set model | Engine <br> model | BHP rating <br> at 1500 RPM | kVA <br> (Prime) | Bore <br> $(\mathbf{m m})$ | Stroke <br> $(\mathbf{m m})$ | Disp. <br> (Itrs) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| C 320 D5 P | NTA 855 G2-1 | 380 | 320 | 140 | 152 | 14.0 |
| C 380 D5 P | NTA 14 G3 | 450 | 380 | 140 | 152 | 14.0 |

## 'K 19' series (500 kVA)

The 'K 19' series, 6 cylinder, inline engine design features have made Cummins diesel the standard for comparison of operating economy, reliability and long life. When all cost factors like initial capital investment, fuel, maintenance and overhaul are considered, the bottom line shows that this compact Cummins engine delivers the lowest life cycle cost.

| Generator |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| set model | \left\lvert\, | Engine |
| :--- |
| model |$\quad$| BHP rating |
| :--- |
| at 1500 RPM |$\quad$| kVA |
| :--- |
| (Prime) | | Bore |
| :--- |
| (mm) | | Stroke |
| :--- |
| (mm) |$\quad$| Disp. |
| :--- |
| (Itrs) |\right.



## 'V 28' series ( $\mathbf{6 0 0}$ and $\mathbf{6 2 5}$ kVA)

The 'V 28' series 12 cylinder engines are proven for their reliability and durability. Upgraded with new technologies for greater performance and economy, these are exported to various Cummins entities across the world.

| Generator <br> set model | Engine <br> model | BHP rating <br> at 1500 RPM | kVA <br> (Prime) | Bore <br> $(\mathbf{m m})$ | Stroke <br> $(\mathbf{m m})$ | Disp. <br> (Itrs) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| C600 D5 P | VTA 28 G3-1 | 710 | 600 | 140 | 152 | 28.0 |
| C625 D5 P | VTA 28 G5-1 | 750 | 625 | 140 | 152 | 28.0 |




## 'K 38' series ( $\mathbf{7 5 0}$ to 1010 kVA) and 'K 50' series ( $\mathbf{1 2 5 0}$ and $\mathbf{1 5 0 0} \mathbf{~ k V A )}$

12 and 16 cylinder ' K ' series ' $V$ ' configuration engines perform with maximum durability and economy. Individual cylinder head, gear driven water pump, self tensioning fan drive and easy serviceability are some of the features. To help you increase your profits is higher fuel efficiency and superior performance over a wide range of operating loads.

| Generator <br> set model | Engine <br> model | BHP rating <br> at 1500 <br> RPM | kVA <br> (Prime) | Bore <br> (mm) | Stroke <br> (mm) | Disp. <br> (Itrs) |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| C 750 D5 P | KTA 38 G2-1 | 890 | 750 | 159 | 159 | 37.8 |
| C 800 D5 P | KTA 38 G3-1 | 950 | 800 | 159 | 159 | 37.8 |
| C 1010 D5 P | KTA 38 G5 | 1180 | 1010 | 159 | 159 | 37.8 |
| C 1250 D5 P | KTA 50 G3 | 1470 | 1250 | 159 | 159 | 50.3 |
| C 1500 D5 P | KTA 50 G8-1 | 1735 | 1500 | 159 | 159 | 50.3 |

## 'QSK 23' series (750 kVA)

The 'QSK 23' series direct injection, water cooled, 6 cylinder, 4 stroke diesel engine has state-of-the-art, full authority electronics, HPI-PT fuel system, purpose designed power cylinder components and a host of safety and protection features that make it the most versatile engine in it's class. They are the most compact in-line engines with unmatched power to weight ratio, electronics and are ready for next level emission norms. They boast optimised charge air cooling, heavy duty camshafts and optimised turbocharging with exceptional fuel efficiency across the operating range.

| Generator set model | Engine model | BHP rating <br> at 1500 <br> RPM | kVA (Prime) | Bore (mm) | Stroke (mm) | Disp <br> (Itrs) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| C 750 D5 P | QSK 23 G3-1 | 880 | 750 | 170 | 170 |  |

## 'QST 30', 'QSK 60' \& 'QSK 78' series (1000 to $\mathbf{3 0 0 0}$ kVA)

The QST 30, QSK 60 and QSK 78 models with higher capacities come armed with electronic controls and PC based service tool software for better genset protection, prognosis and diagnosis that translates into lower downtime and higher productivity.

| Generator <br> set model | Engine <br> model | kVA <br> (Prime) | Bore <br> $(\mathbf{m m})$ | Stroke <br> $(\mathbf{m m})$ | Disp. <br> (Itrs) |
| :--- | :--- | :--- | :--- | :--- | :--- |
| C 1100 D5 | QST 30 G4 | 1110 (Standby) | 140 | 165 | 30 |
| C 2000 D5 | QSK 60 G3 | 1875 | 159 | 190 | 60 |
| C 2250 D5 | QSK 60 G4 | 2000 | 159 | 190 | 60 |
| C 2750 D5 | QSK 78 G9 | 2750 | 170 | 190 | 78 |
| C 3000 D5 | QSK 78 G9 | 3000 (Standby) | 170 | 190 | 78 |

## Gas Generator sets

To leverage the enormous potential of natural gas, producer gas. bio gas \& coal bed methane, Cummins has been developing gas engine technology for longer than four decades. The Company has more than 10000 of its gas engine generator sets operating all over the world and over 1500 in India alone.

Gas power solutions from Cummins can be used for co-generation, continuous power supply, grid parallel and island mode operation. Usage of gaseous fuels like natural gas, producer gas, bio gas, coal bed methane etc., offer visible advantages like:

■ Cleaner Emissions
■ Reliability
■ Economy

- Compactness


The spark ignition engines from Cummins' offer better fuel economy, cleaner emissions, higher durability and extended oil filter change period.

Cummins' gas-powered generators are powered by proven four-stroke, high speed, spark ignited engines designed for increased performance and reduced emissions. Using a lean mixture of air and fuel reduces the combustion temperatures significantly, resulting in high power output with maximum thermal efficiency and minimum emissions. There are already over 3100 MW of installed generator set operating around
the world in tropical as well as cold climatic conditions varying from 50 deg C to -40 deg C ambient temperature..

## Lean Burn Gas Generator sets

Some salient features of our Natural Gas fuelled Generator Sets for base-load application are:

- High Durability rugged design with extended maintenance intervals.
- High efficiency using Lean-Burn technology.
- Close loop Control for better knock control to control emission at lower loads to 40\%.
- Exclusive microprocessor based control module with continuous monitoring of engine and generator set parameters.
- Compact Modular design to reduce installation cost.
- In built digital synchronization and integrated auto load sharing feature.
- First Start Sensor determining preferential auto closing of breaker of in multiple genset installation.
- Highest single step block load absorbing capacity in its range.


## Lean Burn Gas Generators

| Model | Cylinders | Output.(kWe) | Duty Cycle |
| :--- | :---: | :---: | :---: |
| 315GFBA |  |  |  |
| 575GCHA | 6 | 315 | C |
| C 995 N5C | 12 | 575 | C |
| C 1160 N5C | 16 | 995 | C |
| C 1200 N5C | 16 | 1160 | C |
| C 1400 N5C | 16 | 1200 | C |
| C 1540 N5C | 16 | 1400 | C |
| C 1750 N5C | 18 | 1540 | C |
| C 2000 N5C | 18 | 1750 | C |



## Waste Heat Recovery Systems

Cummins offer Gas based power plant along with combined heat \& power applications on turnkey basis from concept to commissioning. We study customer's process \& energy needs and offer the most optimum system configuration to maximise cash savings. A CHP application consists of a generating set to produce electricity, and a waste heat recovery system to capture heat lost from exhaust and cooling water jacket to turn it into usable form of energies for customer process.

The overall efficiency of the gas engine based power plant along with CHP can be raised to over $85 \%$. It can significantly reduce your energy consumption and costs, increase power reliability, and minimize your greenhouse gas footprint.

## Various options of recovering heat from gas generating set

- Hot Water
- Steam
- Thermic Fluid
- Hot Air / Spray Drying
- Chilling


## Natural Gas Generating sets can be used along with waste-heat recovery in the following industries:

- Automotive
- Coal mining and oil fields
- Textile
- Manufacturing Facilities
- Industrial/ Chemical Plants
- Commercial Facilities
- Hospitals and nursing homes
- Hotels

■ Food Processing Plants

- Landfill sites

■ Coal bed Methane

- Well Head Gas


## Special Gas Generating Sets

To support global environment needs and rural development program, Cummins India is manufacturing and supplying engines which run on Producer Gas and Bio Gas. The major differences in these as compared to Natural Gas engines are related to the fuel and ignition systems. These engines have been designed to run on producer gas successfully and achieve desired performance, reliability and durability without compromise on safety.

## Producer Gas Engine Generating Sets

Producer gas is generated in a device known as 'Gasifier', wherein thermo-chemical conversion of biomass occurs in a limited supply of air.

Biomass fuel can be dry wastes like wood, agro-residues/waste, coconut shells, loose biomass like rice husk or willow dust in briquette form, coffee and other plantation wastes.

| Model | Cylinders | Disp. <br> (Ltrs.) | Rating <br> (kVA/Kwe) | Duty <br> Cycle |
| :--- | :---: | :---: | :---: | :---: |
| C 40 P G5 P | 6 | 5.9 | 25 | C |
| C 70 P G5 P | 6 | 14 | 70 | C |
| C 125 P G5 P | 6 | 14 | 120 | C |
| C 240 P G5 C | 12 | 28 | 240 | C |

## Bio Gas engine Generating Sets

Biogas typically refers to a gas produced by the biological breakdown of organic matter in the absence of oxygen. Biogas is produced by the anaerobic digestion or fermentation of biodegradable materials such as dead plant and animal material, animal dung, kitchen waste, manure, sewage, municipal waste and green waste. Biogas comprises primarily of methane

$\left(\mathrm{CH}_{4}\right)$ and carbon dioxide $\left(\mathrm{CO}_{2}\right)$ and may have some amounts of hydrogen sulphide $\left(\mathrm{H}_{2} \mathrm{~S}\right)$, moisture and siloxanes.

| Model | Rating (Kwe) | Duty Cycle |
| :--- | :---: | :---: |
| G6B5.9G |  |  |
| G855G | 32 | C |
| C 1540 N5C | 80 | C |
| C 1750 N5C | 1540 | C |
| C 2000 N5C | 1750 | C |

## Stoichiometric Generator Sets

A mixture of fuel and air enters the engine through a carburettor. The ignition system comprises of ignition distributor, ignition transformer and a spark plug. The air-fuel mixture is ignited at set point to start combustion.

Cummins Gas uses specially designed components to make the engine much more robust structurally than any other conventional spark ignited engine. The combustion chamber components are designed to withstand high cylinder temperatures and peak pressures. This lowers the stress levels resulting in longer service life, higher reliability and lower maintenance cost.

| Model | Prime Power <br> $(\mathbf{k W e})^{\prime} \mathbf{5 0 H z}$ | Base Load <br> $\mathbf{( k W e ) ^ { 2 }} \mathbf{5 0 H z}$ |
| :--- | :---: | :---: |
| G 6B 5.9 G | 40 | 32 |
| G 855 G (BC) | 100 | 85 |
| GTA 855 G(BC) | 144 | 122 |
| GTA 1710 G | 304 | 245 |
| GTA 1150 G | 200 | 160 |
| GTA 2300 G | 400 | 320 |
| GTA 3067 G | 500 | 400 |

The simple \& robust design, user friendly controls, `easy to handle technology' ideally make these products suitable for all applications especially on well head gas, remote sites for $24 \times 7$ reliable and dependable operations as well as stand-by applications.

## Power Electronics

## Automatic Transfer Switches

The Automatic Transfer Switches from the Cummins Power Generation play a critical role in on-site emergency standby power systems by transferring electrical loads from utility service to an alternative power source, such as standby generator, in the event of failure of the primary power source. The product returns the load to primary power, once the utility is back and voltage stabilizes.

The ATS is suitable for critical applications such as hospitals, hotels, data centers, commercial complexes, malls, telecom and process industries where power failure results in loss of major processes and machinery. In India, Cummins Power Generation transfer switches are available in the 40 amps to 4000 amps range, offering safe, dependable and easy-to-use power transfer for modes such as opentransition, in-phase transition backed up by programmed-transition, closed-transition and bypass isolation transfers. They are built for optimizing system reliability and performance while reducing maintenance costs and enhancing the entire system.


## Power Quality Solutions

Cummins Power Electronics specializes in conducting a comprehensive Power Quality Analysis (PQA) to study the peculiarity of an application, impact of Harmonic levels on sources, rate of change of load for correct evaluation of the solution offered for power factor improvement and most importantly correct genset sizing for highly non-linear loads.

Cummins Power Electronics provides world-class customized solutions like:

- Power Quality Analysis
- Real Time Power Factor Compensation cum Harmonic Filtration System (RTPFC)
- Dynamic Reactive Power Factor

Compensation cum Harmonic Filtration System (DRPC)


RTPFC


DRPC


## SilentPower ${ }^{\text {TM }}$

## Acoustic enclosures for diesel generator sets ranging from 7.5 to 1000 kVA.

For thousands of small and midsize projects standby power is delivered silently with the help of our acoustic enclosures branded 'SilentPower ${ }^{\text {ru'l }}$. Manufactured for generator sets rating between 7.5 kVA to 800 kVA , these enclosures meet stringent industry norms for emission specified by the Ministry of Environment

## Typical acoustic enclosure dimensions*

| Generator set model | Prime rating (kVA) | Engine model | Enclosure dimensions |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Length (mm) | Width (mm) | Height (mm) |
| C7.5 D5 P | 7.5 | X 1.3 G 2 | 1456 | 847 | 1032 |
| C10 D5 P | 10 | X 1.3 G 2 | 1456 | 847 | 1032 |
| C1505 P | 15 | $\mathrm{X} 1.7 \mathrm{G1}$ | 2400 | 900 | 1375 |
| C 20 D5 P | 20 | X 2.5 G 2 | 2400 | 900 | 1375 |
| C 25 D5 P | 25 | X 2.5 G 2 | 2400 | 900 | 1375 |
| C 30 D5 P/C 35 D5 P | 30/35 | S 3.8 G3 | 2800 | 1150 | 1450 |
| C 40 D5 P | 40 | S 3.8 G4 | 2800 | 1150 | 1575 |
| C 50 D5 P | 50 | S 3.8 G6 | 2800 | 1150 | 1575 |
| C 62.5 D5 P | 62.5 | S 3.8 G7 | 2950 | 1150 | 1575 |
| C 75 D5 P/C 82.5 D5 P | 75/82.5 | 6 BT 5.9 G1 | 3850 | 1150 | 1700 |
| C 100 D5 P | 100 | 6 BTA 5.9 G5 | 4000 | 1150 | 1700 |
| C 125 D5 P | 125 | 6 BTAA 5.9 G3 | 4000 | 1150 | 1700 |
| C140 D5 P | 140 | 6 BTAA 5.9 G4 | 4000 | 1150 | 1700 |
| C 160 D5 P | 160 | 6 BTAA 5.9 G5 | 4500 | 1500 | 1850 |
| C 180 D5 P | 180 | 6 CTA 8.3 G2-I | 4500 | 1500 | 1850 |
| C 200 D5 P | 200 | 6 CTAA 8.3 G1-I | 4500 | 1500 | 1850 |
| C 250 D5 P | 250 | 6 CTAA 8.3 G4-I | 4650 | 1700 | 2050 |
| C 320 D5 P | 320 | NTA 855 G2 (BC) | 5300 | 1500 | 2025 |
| C 380 D5 P | 380 | NTA 14 G3 | 5300 | 1500 | 2025 |
| C 500 D5 P | 500 | KTA 19 G9 | 6500 | 2000 | 2300 |
| C 600 D5 P | 600 | VTA 28 G3 | 6600 | 2100 | 2702 |
| C 625 D5 P | 625 | VTA 28 G5-I | 6600 | 2100 | 2702 |
| C 750 D5 P | 750 | KTA 38 G2-I | 7500 | 2500 | 2925 |
| C 800 D5 P | 800 | KTA 38 G3-1 | 7500 | 2500 | 2925 |
| C 750 D5 P | 750 | QSK 23 G3-1 | 7000 | 2200 | 2500 |

*Dimensions of the enclosure are excluding the silencer. The information contained in this publication is typical only. It does not form part of any contractual commitment and is subject to change without notice.
and Forest [MOEF], Government of India [GOI], as per notification no. GSR 371 (E) dated May 17, 2002 and are certified for noise control levels of 75 dbA at 1 meter distance by the MOEF, GOI appointed nodal agencies. Developed by a team of highly skilled and proficient engineers from Cummins Power Generation and it's channel partners, these acoustic enclosures are designed to meet world-class sound attenuation levels.

In addition, these compact weatherproof enclosures offer easier serviceability and maintenance and a host of other user-friendly features such as an instrument panel viewing window, single point lifting for easy handling, and a built-in fuel tank.

State-of-the-art manufacturing facilities such as, CNC machines and automated welding, painting and powder coating processes, ensure uniform paint quality and superior finish for a longer and more durable life even at outdoor applications. The 1.6/2mm gauge CRCA sheets provide greater strength and longer shelf life whilst the specially manufactured EPDN gasket fittings help prevent sound leakage. Specially designed lifting points on the base frame assist in load sharing during lifting. Provision of an emergency push button on the outside of the enclosure is in adherence to the required safety measures.

## Design and features

1. Single point lifting for easy handling at customer site (up to 380 kVA )
2. Wide access doors for easy maintenance
3. Instrument panel viewing window
4.Compact design
4. Long lasting acoustic insulation behind perforated steel for attenuation
5. Integrated enclosure design with built-in fuel tank
6. Every enclosure is certified to meet the noise control norms
7. Recessed, easily accessible emergency stop button
8. Cable entry provision for easy installation at site


## PowerCommand ${ }^{\circledR}$ Controls

## Optimise performance with PowerCommand ${ }^{\circledR}$ controls

Only generator sets from Cummins Power Generation are available with integrated PowerCommand ${ }^{\star}$ controls. PowerCommand ${ }^{\star}$ controls offer the capability of integrated digital paralleling, substituting less reliable, complex and expensive paralleling equipment with simple, off-the-shelf solutions.

| Main features | Model |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \hline \text { PS } \\ & 0500 \end{aligned}$ | $\begin{aligned} & \hline \text { PCC } \\ & 1.1 \end{aligned}$ | $\begin{aligned} & \hline \text { PCC } \\ & 3.3 \end{aligned}$ | $\begin{aligned} & \text { PCC } \\ & 3201 \end{aligned}$ |
| General |  |  |  |  |
| AVR | x | - | - | - |
| Electronic governing | x | - | - | - |
| Glow plug control | - | - | x | $\times$ |
| Cycle cranking | - | - | - | - |
| Full authority engine control | x | x | $\times$ | - |
| Networking (LonWorks) | x | $\times$ | 0 | o |
| Fault history | - | - | - | - |

## Operator interface

| Manual start/stop | . | . | . | . |
| :--- | :--- | :--- | :--- | :--- |
| Auto/remote start | . | . | . | . |
| Exercise function | x | x | x | . |
| Auto led | . | . | x | x |
| Not in auto LED | x | . | . | . |
| Manual LED | . | . | x | . |
| Common shutdown LED | . | . | . | . |
| Common warning LED | . | . | . | . |
| Exercise LED | x | x | x | . |
| Fail to start LED | x | x | x | x |
| Emergency stop | . | . | . | . |
| Alpha/numeric screen | . | . | . | . |
| Remote start input active led | . | . | x | . |
| Fault reset | . | . | . | . |

## Threshold warning indicators

| Low oil pressure | . | . | . | . |
| :--- | :--- | :--- | :--- | :--- |
| Low engine coolant temp.(warning) | x | . | . | . |
| High engine coolant temperature | . | . | . | . |
| Low coolant level | . | x | . | . |
| Low battery voltage | . | . | . | . |
| High battery voltage | . | . | . | . |
| Battery alt.charge fault | . | . | x | x |
| Over current | x | . | . | . |
| Overload | x | x | . | u |


| Main features | Model |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | PCC | PCC |  |
|  | 0500 | 1.1 | 3.3 | 3201 |
| Paralleling capability |  |  |  |  |
| Auto synchronising (isolated bus) | $x$ | x | - | - |
| kWe \& VAr load sharing control | x | x | - | - |
| Auto synchronising (utility bus) | X | x | - | - |
| Base load (utility bus) | x | x | - | - |
| Synchroscope | X | X | - | - |

Power transfer function

| Open transition transfer | x | x | x | o |
| :--- | :--- | :--- | :--- | :--- |
| Hard closed transition | x | x | x | o |
| Soft closed transition (ramping) | x | x | x | o |
| Transfer \& base load (utility) | x | x | x | o |
| Gen/mains breaker control | x | x | x | o |
| Gen/mains breaker status protection | x | x | x | o |

## Environment

| Operating temperature range | -15 to | . | . | . |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $-40^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $+70^{\circ} \mathrm{C}$ | . | . | . |
| Humidity up to $95 \%$ <br> (non condensing) | $95 \%$ | . | . | . |

Shutdown protection \& indication - Engine

| Low fuel level | . | o | . | . |
| :--- | :--- | :--- | :--- | :--- |
| High fuel level | x | x | x | x |
| Low oil pressure | . | . | . | . |
| High engine coolant temperature | . | . | . | . |
| Failure to crank shutdown | . | . | . | . |
| Over crank (failure to start) | . | . | . | . |
| Overspeed | x | . | . | . |

## Shutdown protection \& indication - Alternator

| Under \& over voltage | . | . | . | . |
| :--- | :--- | :--- | :--- | :--- |
| Under \& over frequency | $\mathbf{n}^{*}$ | . | . | . |
| Overcurrent | x | . | . | . |
| Earth leakage | x | 0 | 0 | 0 |
| Reversepower | x | x | . | . |
| Reverse $\operatorname{VAr}$ | x | x | x | u |

## PowerCom ${ }^{\oplus}$ Controls



| Main features | Model |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | PS | PCC | PCC | PCC |
|  | $\mathbf{0 5 0 0}$ | $\mathbf{1 . 1}$ | 3.3 | $\mathbf{3 2 0 1}$ |
| Codes \& standards |  |  |  |  |
| CE compliant | . | . | . | . |
| NFPA110 | NFPA99 | . | . | . |
| UL 508-listed / recognized | x | . | . | . |
| UL-certified | x | . | . | . |

Customer configurable inputs \& outputs

| Digital inputs | :(1) | :(2) | N/A | N/A |
| :--- | :--- | :--- | :--- | :--- |
| (shutdown,warning or status) |  |  |  |  |
| Digital outputs | (1) | $\times(4)$ | a | • |
| (shutdown,warning or status) |  |  |  |  |

## Measurement \& instrumentation - Engine

| Oil pressure | . | . | . | . |
| :--- | :---: | :---: | :---: | :---: |
| Oil temperature | x | x | o | o |
| Water temperature | . | . | . | . |
| Engine speed | x | . | . | . |
| Hours run | . | . | . | . |
| Number of starts | x | . | . | . |
| Battery voltage | . | . | . | . |
| Exhaust temperature | x | x | o | o |

## Measurement \& instrumentation - Alternator

| 3 Phase L-L \& L-N voltage \& frequency |  | - | - | - | - |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 3 Phase current |  | - | - | - | - |
| kWh |  | X | x | - | - |
| Total kVa |  | - | $\square$ | - | - |
| Total kWe \& kVAr |  | x | x | x | - |
| PF |  | x | x | - | - |
| Per phase kVAr, kWe |  | x | x | x | - |
| Per phase kVA |  | - | x | x | - |
| - Standard | N/A | Not Applicable |  |  |  |
| $x$ Not Available | - | Under frequency |  |  |  |
| - Option | $*^{1}$ | Common shutdown fault (single output) |  |  |  |



PCC3100


PCC3201

PowerCom ${ }^{\oplus}$ control is a microprocessor based generator set monitoring, protection and electronic governing system that offers an advanced level of functions for reliability and optimum generator set performance. The controller is designed in such a way that it supports a wide range of genset configurations. PowerCom ${ }^{\oplus}$ is offered as a standard for gensets in the 320 kVA to 625 kVA range.

| Standard features | Fail to start (shutdown) |
| :---: | :---: |
| Governor and speed / frequency regulation | Over speed (shutdown) |
|  | Low / High battery voltage (warning) |
| Integrated electronic governing (adjustable up to 5\%) | Low coolant level shutdown |
|  |  |
|  | AC protection |
| Operator interface | Over frequency (shutdown) |
| Manual Stop / Start | Over current (warning) |
| Remote Start / Stop | Over Voltage (shutdown) |
| Cyclic cranking | Under Voltage (shutdown) |
| Alpha numeric screen | Under frequency (waming) |
| Alternator trim adjustment |  |
| Model specific calibration | Miscellaneous |
| Field trim adjustment | Operating temperature range $0-60{ }^{\circ} \mathrm{C}$ |
| $A C$ instruments | Common fault alarm |
|  | Common shutdown |
| $\frac{\text { 3-Phase AC Amps }}{\text { 3-Phase AC Volts }}$ | Battery voltage |
|  | Date and time stamps for alarms |
| kW | Dimensions (in mm) are 267*378*157 |
| kVA |  |
| Power factor | Additional features |
| Frequency | Speed bias or raise / lower inputs |
|  | are provided for paralleling |
| Measurements / Instrumentation | Remote monitoring capability |
| Lube oil pressure | through separate interface modules |
| Coolant temperature | Engineering tool / manufacturing tool |
| Engine speed | / service tool compatibility with |
| Hours run | existing tools |
| Battery Voltage | 6 configurable discrete outputs |
|  | 2 configurable discrete inputs |
| Engine protection | Fault indication on front panel |
| High coolant temperature | display using fault LEDs |
| (warning \& shutdown) | Smooth transition to rated speed |
| Low lube oil pressure (warning \& shutdown) | Programmable fault thresholds |
|  | Controlled ramping to restrict |
| Fail to crank (shutdown) | start up smoke |

## Dependable after-market support

Cummins helps your business achieve greater success by providing unmatched support and service through every phase of your power application project.

We offer robust and efficient generator sets for standby and continuous power generation.

For standby and backup power, we have Diesel Generator Sets. For continuous Power Generation, we have Gas Generator sets - which run on a variety of fuels, namely Natural Gas, Bio Gas, Producer Gas, Coal Bed methane and Well-head gas.

Our very own Distribution Business Unit sees to it that you receive prompt service, round-the-clock. This task is supported by over 36 authorized dealers located across the Country.

Our $24 \times 7$ toll-free Customer Care 1-8002332000 will put you in touch with one of our helpful, trained engineers, who will guide you through the servicing and maintenance of your Cummins gensets.

We strive to ensure we offer the best products and services so that you can depend on us.

Key facts about Cummins services:

## Over 36 authorized dealers across the country.

شركة أولاد عبدالوهاب عبدالعزيز القطامي Abdulwahab Abdulaziz AI Qatami's Sons Co.
Canada Dry Street next to Ghannam
Telephone: 24849135
Fax: 24831678
Mobile: 96960072
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## Cummins service network

- CIL Factory
- CSSoffices
- Dealer locations
(Multiple service branches)
- Parts distribution centres
- CSS parts depots

As a user of Cummins products, you can expect a face-to-face relationship with someone worthy of your trust and fast access to reliable service, engineering expertise and parts support. DBU service outlets are spread strategically across the Country with technicians trained to the highest Cummins standards.

