

Diesel generator set S series

with user friendly PS0500 genset controller



Specification sheet

28-50 kWe, 35-62.5 kVA Prime

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Latest technology product : Value for money

The **Cummins® 'S series'** engine powered diesel generating sets offer the best fuel economy, best warranty terms and lowest cost of maintenance thereby proving to be the most economical power solution. With the superior designed engine and world class Cummins Generator Technologies (Stamford) make alternator, the gensets come equipped with Cummins corporate genset controller for ease of use and monitoring generator performance.

Silent, compact and light weight

The **Cummins® 'S series'** DG sets are smaller and lighter than any other DG set in its class, thus giving you the advantage of optimising your valuable space.

Environment friendly power

The **Cummins® 'S series'** base DG sets are available with the lowest noise levels in its range and are CPCB certified for emissions and noise compliance, thus offering you environment friendly power.



The genset powered by the reliable **Cummins® 'S series'** diesel engine meets stringent exhaust emission tests as per MOEF norms without sacrificing fuel efficiency at normal operating loads.

Unmatched warranty

The **Cummins® 'S series'** DG sets are backed by the industry acknowledged best-in-class comprehensive warranty on the entire package including rubber components.

Lowest operating costs

All elements of the **Cummins® 'S series'** DG sets are designed from the start to work together to maximize efficiency, even at part loads, thus offering you the advantage of lowest operating costs.

Single source power assurance

The rugged and reliable **Cummins® 'S series'** DG sets are unique, because all the major components - the engine, alternator, control system and canopy are manufactured by Cummins India. This integral approach means each element of a generating set is designed to work in harmony from the start. A high quality product, complemented by the largest customer support network in India, providing round-the-clock service and spares support, offers you SINGLE SOURCE POWER ASSURANCE from the world leaders in power generation.

Standard scope

Engine: Cummins® 'S series' diesel generating sets, powered by Cummins® 'S series' engines, are rated at 1500 RPM and conform to ISO 8528 specifications. The engines are radiator cooled, four stroke and multi-cylinder, conforming to BS 5514 / ISO 3046.

The scope of supply includes:

- Battery charging alternator
- MICO In-Line fuel system with mechanical governor
- Dual spin-on filter
- Lube oil filter
- Lube oil and filter change at 500 hrs.
- Turbocharger (for 40, 50 and 62.5 kVA)
- Silencer (Critical grade)
- CAC : Charge Air Cooler (for 62.5 kVA DG sets only)
- Dry type Air cleaner
- Shut-off coil with safeties for LLOP/ HWT
- Flywheel and flywheel housing
- First fill of lube oil and coolant

Alternator: Stamford alternator from Cummins Generator Technologies, suitable for operation at 1500 RPM, 415 Volts, 0.8 pf (lag) suitable for 50 Hz, 3 phase, 4 wire system, conforming to BS 5000 / IS 4722. The Alternator is brushless type, screen protected, revolving field, self excited, self regulated through an AVR. The alternator has the following features:

- ± 1.0 % Voltage regulation (max.) in static conditions
- IP: 23 protection with insulation class H
- Permissible overload of 10% for one hour in 12 hours of operation
- 'P1' frame alternator on 35 & 40 kVA node provides improved serviceability. It is designed for ease of assembly, Light in weight. This alternator is also available with upfitable option of EBS (Excitation Boost System) for good motor starting and short circuit maintenance.

Mounting arrangement: Engine and alternator are mounted on a common MS fabricated base frame with AVM pads.

Control Panel: The control panel is manufactured with 14/16 gauge CRCA sheet and is powder coated for weather-proof and long lasting finish.

The control panel consists of the following parts:

- PS0500 Controller
- Aluminum bus bars with suitable capacity with in/outgoing terminals
- Indicating lamps for 'Load On' and 'Set Running'
- Instrument fuses duly wired and ferruled
- MCCB of suitable rating with overload and short circuit protections

Control panel: The control panel is manufactured with 14/16 gauge CRCA sheet and is powder coated for a weather-proof and long lasting finish. The control panel consists of the following parts:

- PCC 0301 - Keyswitch / Autostart Generator Set Controller
- Multifunction meter displaying the below parameters :
 - Voltage
 - Current
 - Frequency
 - Water temperature
 - Oil pressure
 - kVA
 - kW
- MCCB of suitable rating with overload and short circuit protection
- Current transformers
- Aluminum busbars of suitable capacity with incoming and outgoing termination
- Indicating lamps for "Load On" and "Set Running"
- Instrument fuses duly wired and ferruled

PCC 0301: Genset controller

The PowerCommand™ (0301) control is a microprocessor- based generator set monitoring and control system mounted in the Genset Control Panel. The control provides a simple operator interface to the generator set, manual and remote start/stop control, shutdown fault indication, and an LCD hour counter. The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional generator set control systems.



Control system: The standard control system includes all the functions necessary to locally or remotely start and stop and protect the generator set.

- **Key switch** – OFF and MANUAL/AUTO - In the OFF mode, the generator set is immediately shut down (if running) and cannot be started. It also resets any faults. In this mode, all power is removed from the control and its outputs. In MANUAL/AUTO mode, the control is powered. The manual start pushbutton and remote start input become enabled.
- **Manual start button** – This button will initiate a genset start sequence when the control is in MANUAL/AUTO mode. This button is locked out when the engine is running.
- **LED indicating lamps** – The control includes LED lamp indication for the following functions:
 1. Fail to start
 2. Overspeed, underspeed
 3. Low oil pressure
 4. High engine temperature
 5. Battery charging alternator fail
- **LCD engine hour counter** – The control includes an LCD engine hour counter. The counter will increment whenever the engine is running.

Functions : Control / Protection

Control	Protection
Remote Start – When in MANUAL/AUTO mode the control accepts a ground signal from remote devices to automatically start the generator set.	- Overspeed shutdown
Engine Starting – The control system supports automatic engine starting, which includes solid state outputs for starter control, and fuel solenoid control. The start disconnect is achieved by monitoring main alternator output frequency.	- Low lube oil Pressure shutdown - High engine water temperature shutdown
Starting Sequence – In the MANUAL/AUTO mode, the crank cycle is repeated up to 3 times, if starting is still unsuccessful a Fail to Start fault is generated. If the engine starts, the crank cycle is terminated at a crank disconnect frequency of 20 Hz.	- Underspeed shutdown - Fail to start, shutdown after 3 Attempts - Battery charging alternator fail warning

Others:

- Fuel tank suitable for 8 hours of operation

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Acoustic enclosure:

The acoustic enclosure is made of 1.6/ 2 mm thick CRCA sheets in Munsel green shade and a structural/ sheet metal base frame painted in black. The walls of the enclosure are insulated with fire retardant foam so as to comply with the 75 dBA at mtr sound levels specified by Ministry of Environment & Forest.

The enclosure has the following features:

- Specially designed to meet stringent MOEF/ CPCB norms of 75 dBA @ 1mtr at 75% load under free field conditions
- Single point lifting for easy handling at customer site
- Designed to have optimum serviceability
- Air inlet louvers specially designed to operate at rated load
- Made on special purpose CNC machines for consistency in quality and workmanship

- Powder coated for long lasting service life and superior finish
- With UV resistant powder coating, can withstand extreme environments
- Use of special hardware for longer life
- Insulation material meets exacting IS 8183 specifications for better sound attenuation
- Flush styling - no projections
- Fluid drains for lube oil and fuel
- Fuel filling point

Optionals

- Cold starting kit
- Coolant heater
- Microprocessor / relay based AMF control panel
- Trolley mounted mobile sets

Technical data

Generator set specifications

Model	C 35 D5 P	C 40 D5 P	C 50 D5 P	C 62.5 D5 P
Prime Power Rating kVA / kW	35/28	40/32	50/40	62.5/50
Current (Amps)	49	56	70	87
No. of Phases	3 Phase	3 Phase	3 Phase	3 Phase
Power Factor	0.8 (lag)	0.8 (lag)	0.8 (lag)	0.8 (lag)

Engine specifications

Make	Cummins	Cummins	Cummins	Cummins
Model	S 3.8 G3	S 3.8 G4	S 3.8 G6	S 3.8 G7
BHP	45	58	69	80
Cooling	Water Cooled	Water Cooled	Water Cooled	Water Cooled
Aspiration	Natural	Turbocharged	Turbocharged	Turbocharged Charged Air Cooled
No. of Cylinders	4	4	4	4
RPM	1500	1500	1500	1500
Bore x Stroke (mm)	97 x 128	97 x 128	97 x 128	97 x 128
Compression Ratio	17.5:1	17.5:1	17.5:1	17.5:1
Displacement (Ltrs.)	3.8	3.8	3.8	3.8
Fuel	HSD	HSD	HSD	HSD
Fuel Consumption (Ltr/hr) @ 75% Load with Radiator & Fan	6.3	8.0	9.3	10.8
Governor	Mechanical	Mechanical	Mechanical	Mechanical
Starting System	12 V Electrical	12 V Electrical	12 V Electrical	12 V Electrical
Lube oil Specification	CH4 15W40	CH4 15W40	CH4 15W40	CH4 15W40
Lube oil Sump Capacity (Ltrs.)	9	9	9	9
Lube oil consumption (LPH)	0.019	0.024	0.029	0.034
Total Coolant Capacity (Ltrs.)	8	8	8	10.5
Exhaust Pipe Size (mm)	75	75	75	75
Battery Capacity / Rating (Cummins Pulselite)	45 AH 12 V	45 AH 12 V	45 AH 12 V	45 AH 12 V

Alternator specifications

Voltage	415 V	415 V	415 V	415 V
RPM / Frequency	1500 / 50 Hz	1500 / 50 Hz	1500 / 50 Hz	1500 / 50 Hz
Enclosure	IP 23	IP 23	IP 23	IP 23
Voltage Regulation (max)	+/- 1%	+/- 1%	+/- 1%	+/- 1%
Class of Insulation	H Class	H Class	H Class	H Class
Alternator Frame	PI114H	PI114J	UCI224D	UCI224F

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Conformance standards

IS 4722, BS 5000, IS 1460, ISO 8528, BS 5514, ISO 3046

Rating definitions

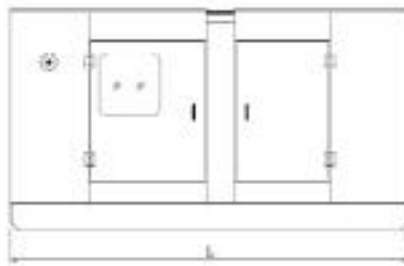
Prime Power:

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.

- Fuel consumption data is based on diesel having specific gravity of 0.85 and conforming to IS:1460
- Oil consumption data is based on oil having specific gravity of 0.89 and meeting CF4 API categories
- Fuel consumption tolerance is +5%

Typical enclosed genset dimensions*

Genset Model	Rating (kVA)	Length (mm)	Width (mm)	Height (mm)	Weight (kgs.) (Wet)
C 35 D5 P	35 kVA	2800	1150	1450	1551
C 40 D5 P	40 kVA	2800	1150	1575	1551
C 50 D5 P	50 kVA	2800	1150	1575	1551
C 62.5 D5 P	62.5 kVA	2950	1150	1575	1681



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