



Diesel generator set KTAA19 series engine

631 kVA 50 Hz



Description

This Cummins® 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.

Alternator – Low reactance 2/3 pitch windings; low wave form distortion with non-linear loads, fault clearing short-circuits capability, and class H insulation.

Cooling system – Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

Control system – Standard PowerCommand® electronic control provides total system integration including auto remote start/stop, alarm and status message display.

Warranty – Backed by a comprehensive warranty and Worldwide distributor network.

| Model | Standby rating | | Prime rating | | Data sheet | |
|---------|----------------|----------------|----------------|----------------|------------|-------|
| | 50 Hz kVA (kW) | 60 Hz kW (kVA) | 50 Hz kVA (kW) | 60 Hz kW (kVA) | 50 Hz | 60 Hz |
| C640 D5 | 631 (505) | | 575 (460) | | EA_T_EX_4 | |

Generator set specifications

| | |
|---|-------------|
| Governor regulation class | ISO8528 G2 |
| Voltage regulation (no load to full load) | ±1% |
| Steady-state voltage variation | ±1% |
| Frequency regulation (no load to full load) | Isochronous |
| Steady-state frequency variation | ±0.25% |
| EMC compatibility | N/A |

Engine specifications

| | |
|-----------------------------|--|
| Design | 4 cycle; In-line; 6 turbocharged and charge air after-cooled |
| Bore | 159 mm (6.25 in.) |
| Stroke | 159 mm (6.25 in.) |
| Displacement | 19 liter (1159 in. ³) |
| Cylinder block | Cast iron, 6 Cylinder |
| Battery capacity | 640 CCA (0°C to 10 °C) |
| Battery charging alternator | 35 amps |
| Starting voltage | 24 volt, negative ground |
| Fuel system | Direct injection Cummins PT |
| Fuel filter | Spin on fuel filters with water separator |
| Air cleaner type | Dry replaceable element with restriction indicator |
| Lube oil filter type(s) | Spin on full flow filter |
| Standard cooling system | 122F (50 °C) * ambient radiator |

*@0" Restriction, Ambient measured at the cooling air inlet to the set

Alternator Specifications

| | |
|--|--|
| Design | Brushless, 4 pole, drip-proof revolving field |
| Stator | 2/3 pitch |
| Rotor | Single bearing, flexible disc |
| Insulation system | Class H |
| Standard temperature rise | Standby, 150°C (at 40°C ambient temperature) |
| Exciter type | Shunt |
| Phase rotation | A (U), B (V), C (W) |
| Alternator cooling | Direct drive centrifugal blower fan |
| AC waveform total harmonic distortion (THDV) | No load < 1.5%. Non distorting balanced linear load < 5% |
| Telephone influence factor (TIF) | < 50% (per NEMA MG1-22.43) |
| Telephone harmonic factor (THF) | < 2% |

Available voltages

50 Hz Line–Neutral/Line–Line

- 230/400

Generator set options and accessories

Note: Options consult factory.

Control system

Generator set control PowerCommand 1.2 –

The PowerCommand 1.2 control is a microprocessor based generator set monitoring control system. The control provides a simple operator interface to the generator set, digital voltage regulation, digital engine speed governing, start/stop control and protective functions.

- The PowerCommand 1.2 control is suitable for use on a wide range of generator sets in non-paralleling applications.
- The PowerCommand control can be configured for any frequency, voltage and power configuration from 120 to 600 VAC for 50 Hz or 60 Hz operation.
- Power for the control is derived from the generator set starting batteries. The control functions over a voltage range from 8 VDC to 35 VDC.
- A larger HMI reduces setup time, provides more information per screen, enhanced navigation and serviceability.
- Includes all functions to locally or remotely start and stop, and protect the generator set.
- Control switch – RUN/OFF/AUTO.
- OFF mode – the generator set is shut down and cannot be started, as well as reset faults.
- RUN mode – the generator set will execute its start sequence.
- AUTO mode – the generator set can be started with a start signal from a remote device.

Status indications – The control has a lamp driver for external fault/status indication. Functions include:

- The lamp flashes during preheat (when used) and while the generator set is starting.
- READY TO LOAD – flashing until the set is at rated voltage and frequency, then on continuously.
- Fault conditions are displayed by flashing a two-digit fault code number.

LED indicating lamps – includes LED indicating lamps for the following functions:

- Remote start
- Warning
- Shutdown
- Auto
- Run
- Remote emergency stop switch input. Immediate shut down of the generator set on operation.

Major features

- 12 or 24 VDC battery operation.
- Digital engine speed governing to provide isochronous frequency regulation.
Digital voltage regulation full wave rectified single phase (line to line) sensing.
- Generator set monitoring monitors status of all critical engine and alternator conditions functions.
- Engine starting includes relay drivers for start and Fuel Shut Off (FSO).
- Configurable inputs and outputs – two discrete inputs and two dry contact relay outputs.
- Smart starting control system – integrated fuel ramping to limit black smoke and frequency overshoot.
- Advanced serviceability using InPower™, a PC based software service tool.

Base engine protection

- Low oil pressure shutdown.
- High engine temperature shutdown.
- Under speed/sensor fail shutdown.
- Fail to start.
- Battery charging alternator fail warning.

HMI220 operator interface

- Back-lit graphics 128 x 128 LCD display.
- English text and symbolic overlay.
- Multiple language LCD screens.
- Dedicated manual/off/auto function switches with mode LEDs and configurable access code (key switch).
- Control set-up without PC-based tool (InPower).
- UL508 recognized/CSA certified/CE compliant.
- Multiple HMIs per generator set (one local and one remote).
- Plug and play operation.



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.

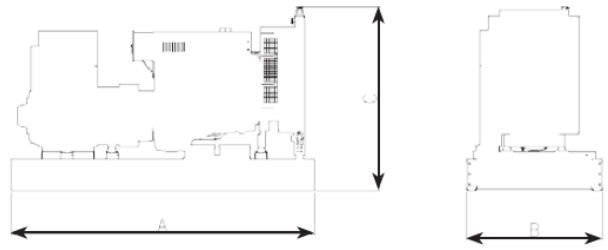
Limited-Time Running Power (LTP):

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.



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

Weight and dimensions

| Model | A, mm | B, mm | C, mm | Dry Wt.* (kg) | Wet Wt.* (kg) |
|---------|-------|-------|-------|---------------|---------------|
| C640 D5 | 3684 | 1454 | 2000 | 4564 | 4703 |

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

Certifications



This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

ISO 8528

This generator set has been designed to comply with ISO 8528 regulation.

For more information contact your local Cummins distributor or visit power.cummins.com

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