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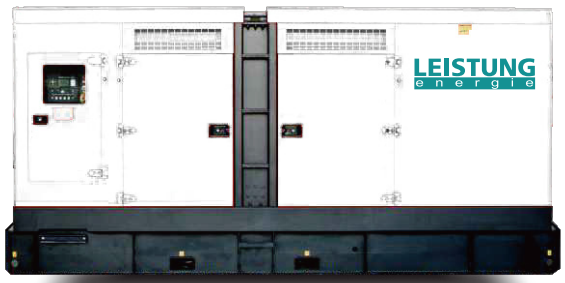
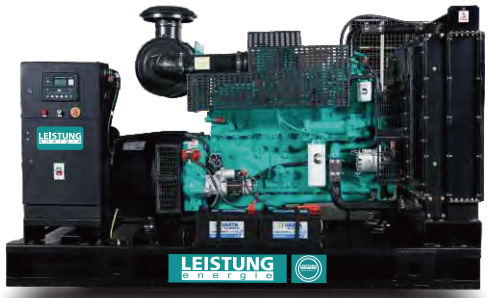
Model: C440E5

Powered by CUMMINS





Generator Specification

Service	PRP(1)	ESP(2)
Power (kVA)	400	440
Power (kW)	320	352
Rated speed (r.p.m)	1500	
Standard voltage (V)	400/230 V	
Rated at power factor(cos phi)	0.8	

AGG Power gensets are compliant with ISO 9001 and CE standard, which include the following directives:

- 2006/42/EC Machinery safety.
- 2006/95/EC Low voltage
- EN 60204-1: 2006+A1: 2009, EN ISO 12100: 2010, EN ISO 13849-1: 2008, EN 12601 : 2010

(1) PRP (Prime Power):

According to ISO8528-1, prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during at 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

(2) ESP (Standby Power):

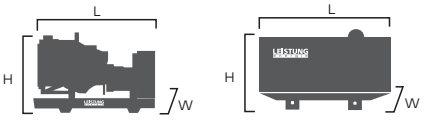
According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Powers	ESP		PRP		Standby
Voltage (V)	KVA	KW	KVA	KW	Amps
415/240	440	352	400	320	612.1
400/230	440	352	400	320	635.1
380/220	440	352	400	320	668.5

Performance Data		
Model		C440E5
Engine brand		Cummins
Engine model		QSNTG3
Speed control type		ECM
Phase		3
Control system		Digital
Starter motor voltage		24 V
Frequency		50 HZ
Engine speed (RPM)		1500
Fuel Consumption (L/H)	100% standby power	81.5
	100% prime power	73.4
	75% prime power	57.3
	50% prime power	40.5

Standard reference Conditions

Note: Standard reference condition 25°C[77°F] air inlet temp, 100m(328ft) A.S.L 30% relative humidity. Fuel consumption dat with diesel fuel with specific gravity of 0.85 and conforming to BS 2869: 1998, Class A2



Dimension and Weight		
Dimension	Open	Silent
Length (L)	3185mm	4612mm
Width (W)	1265mm	1400mm
Height (H)	2015mm	2240mm
Net Weight	3257 KG	4350 KG
Fuel Tank (L)	650 L	700 L

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Engine Specification: QSNTG3

Basic technical data	
No. of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Turbocharged&Charge Air Cooled
Compression ratio	16.3 :1
Bore	140 mm
Stroke	152 mm
Displacement	14 L
Firing Order	1-5-3-6-2-4
Approximate engine weght	1510 kg

Cooling system	
Coolant capacity-engine	21 L
Maximum coolant friction head external to engine:	34.5kPA
Maximum static head of coolant above engine crank centerline	14 m
Standard Thermostat (Modulating) Range	82-94 ℃
Minimum Pressure Cap	69 kPA
Maximum Top Tank Temperature	
- for standby power	104 ℃
- for prime power	100 ℃
Minimum top tank temperature	71 ℃

Fuel system	
Injection system	CELECT
Maximum fuel supply restriction at fuel pump inlet	
- with clean fuel filter	20kPA
- with dirty fuel filter	34kPA
Maximum fuel drain restriction	
- with check valve	22kPA
- without check valve	8.5kPA
Max supply fuel flow@1500/1800rpm	255/275 kg/hr
Max return fuel flow@1500/1800rpm	175/195kg/hr
Max. fuel inlet temp	71 ℃

Air induction system	
Maximum intake air restriction with heavy duty air cleaner:	
-Dirty element	25 in H_2O
-Clean element	15 in H_2O

Lubrication system	
Engine oil pressure for engine protection devices:	
— Idle speed(Minimum)	103kPa
— Governed speed(Maximum)	241-345kPa
Maximum oil temperature	121 ℃
Total system capacity	38.6 L

Electrical system	
Cranking motor (Heavy duty, positive engagement	24V
Minimum recommended battery capacity for engine	
@ cold soak at 10 ℃ and above	600 CCA
@ cold soak at 0-10 ℃ and above	640 CCA
@ cold soak at -18-0 ℃ and above	900 CCA
Maximum allowable resistance of cranking circuit	0.002 Ohm

General installation	Prime power
Gross engine power output	358kW
Brake mean effective pressure	2046 kPA
Friction Power	31.4 kW
Intake air flow	474 L/S
Charge air flow	1988 kg/h
Turbo comp outlet pressure	216 kPA
Turbo comp outlet temp	178 ℃
Exhaust gas temp	489 ℃
Exhaust gas flow	2062 kg/h
Heat rejection to exhaust	293 kW
Heat rejection to ambient	18 kW
Heat rejection to fuel	5.5 kW
Heat rejection to aftercooler	72 kW

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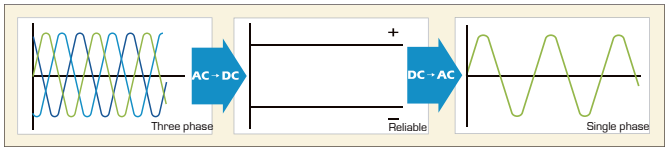
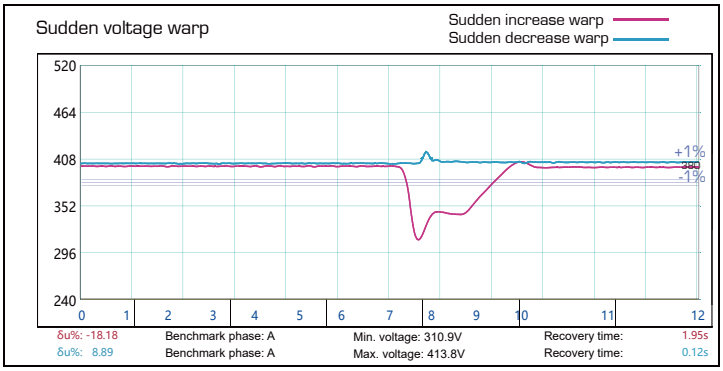
Alternator Specification

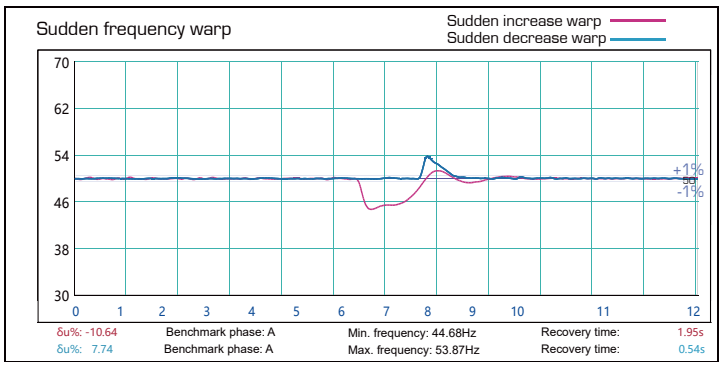
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



Emergency voltage curve



Emergency frequency curve



Options

Engine	Alternator	Generator Sets	Fuel System
▪ Water Jacket Pre-heater ▪ Fuel heater	▪ Winding Temp measuring Instrument ▪ Alternator Pre-heater ▪ PMG ▪ Anti-damp and anti-corrosion treatment ▪ Anti-condensation heater ▪ Winding and bearing RTD	▪ Tools with the machine ▪ Extended range fuel tank ▪ Bunded fuel tank	▪ Low fuel level alarm ▪ Automatic fuel feeding system ▪ Fuel T-valves
Canopy	**Lub oil system**	**Cooling System**	**Control Panel**
▪ Rental type Canopy ▪ Trailer	▪ Oil Pre-heater ▪ Oil temp sensor	▪ Front heat protection	▪ Remote control panel ▪ ATS ▪ Synchronizing controller ▪ Adjustable earth leakage relay

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Control Panel

Configuration

- Emergency stop button
- Protection MCB
- Battery charger
- Integrated aviation plug
- ATS connection
- Digital control module

Features

- 3 phase generator set monitoring
- Support of engines equipped with electronic control unit
- Comprehensive diagnostic message
- Automatic or manual start/stop of the gensets
- Push buttons for simple control, lamp test
- Graphic back-lit LCD display
- Parameters adjustable via keyboard or PC
- Mains measurements（50HZ/60HZ）
- Generator measurements（50HZ/60HZ）
- Comprehensive shutdown or warning on fault condition
- 3 phase Generator protections
  - Over-/under voltage
  - Over-/under frequency
  - Current/voltage asymmetry
  - Over current/overload
- 3 phase AMF function
  - Over-/under frequency
  - Over-/under voltage
  - Voltage asymmetry
- Configurable analog inputs
- Battery voltage, engine speed (pick-up) measurement
- Configurable programmable binary inputs and outputs
- Warm-up and cooling functions
- Generator C.B. and Mains C.B. control with feedback and return timer
- RS232 interface
- Modem communication support
- Hours counter
- Sealed to Ip65
- Event log

Benefits

- Less wiring and components
- Integrated solution
- Less engineering and programming
- User friendly set-up and button layout
- Module can be configured to suit individual applications
- PC software for simplified configuration
- Wide range of communication capabilities

Operation conditions

- Operation temp: -20 ℃ to + 70 ℃
- Storage temp: -30 ℃ to + 80 ℃
- Operating humidity: 95% w/o condensation
- Vibration : 5-25Hz, ±1.6mm
  5-100Hz, a=4g
- Shocks: a= 500m/s²

Options

- Ethernet interface (Remote monitoring and control)
- GSM modem/wireless internet (Remote monitoring and control)
- RS232-RS485 Dual port interface
- Synchronizing control panel
- Distribution board with sockets kit and power busbar
- Battery trickle charge ammeter
- Earth leakage protection
- Earth fault protection
- Low fuel level alarm
- Low fuel level shutdown
- High fuel level alarm
- Fuel transfer system control
- Low coolant level shutdown
- High lube oil temp shutdown
- Overload via alarm switch on breaker
- Engine coolant heater controls
- Control panel heater
- Speed adjust switch
- Oil temp displayed on LCD screen
- Additional 8 inputs and outputs

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