



## INTRODUCTION

Aksa power generation system, providing optimum performance, and reliability, for stationary standby, prime power, and continuous duty applications. All generator sets are factory build, and production tested.

### Power (kVA)

3 Phase, 50 Hz, PF 0.8

VOLTAGE	STANDBY RATING (ESP)		PRIME RATING (PRP)		Standby Amper
	kW	kVA	kW	kVA	
400/231	1800,00	2250,00	1636,00	2045,00	3247,69

**STANDBY RATING (ESP)** Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. ESP is in accordance with ISO 8528-1. Overload is not allowed.

**PRIME RATING (PRP)** Applicable for supplying power to varying electrical load for unlimited hours. PRP is in accordance with ISO 8528-1. 10 % overload capability is available for a period of 1 hour within 12-hour period of operation.

## General Characteristics

Model Name	AC 2250
Frequency (Hz)	50
Fuel Type	Diesel
Engine Made and Model	CUMMINS QSK60-G4
Alternator Made and Model	ECO 46-1L/4 A
Control Panel Model	DSE 7320
Canopy	AK 99

## ENGINE SPECIFICATIONS

Engine	CUMMINS
Engine Model	QSK60-G4
Number of Cylinder (L)	16 cylinders - V type
Bore (mm.)	159
Stroke (mm.)	190
Displacement (lt.)	60.2
Aspiration	Turbo Charged and AfterCooled
Compression Ratio	14.5:1
RPM (d/dk)	1500
Oil Capacity (Total With Filter) (lt)	280
Standby Power (kW/HP)	1915/2567
Prime Power	1730/2319
Block Heater QTY	2
Block Heater Power (Watt)	3000
Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Cummins HPI-PT
Governor System	Electronic
Operating Voltage (Vdc)	24 Vdc



Battery and Capacity (Qty/Ah)	4x143
Charge Alternator (A)	55
Cooling Method	Water Cooled
Cooling Fan Air Flow (m3/min)	2374
Coolant Capacity (engine only / with radiator) (lt)	157/500
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (lt/hr)	394
Fuel Cons. Prime With %75 Load (lt/hr)	291
Fuel Cons. Prime With %50 Load (lt/hr)	200

### ALTERNATOR CHARACTERISTICS

Manufacturer	Mecc Alte
Alternator Made and Model	ECO 46-1L/4 A
Frequency (Hz)	50
Power (kVA)	2100
VOLTAGE (V)	400
Phase	3
A.V.R.	DER1
Voltage Regulation	(+/-)0.5%
Insulation System	H
Protection	IP23
Rated Power Factor	0.8
WEIGHT COMP. GENERATOR (Kg)	3810
COOLING AIR (m <sup>3</sup> /min)	135

### Open Gen.Set Dimensions (mm)

LENGTH	5706
WIDTH	2408
HEIGHT	3090
DRY WEIGHT (kg.)	15500
TANK CAPACITY (lt.)	2000

### Gen.Set Canopy Dimensions (mm)

LENGTH	9000
WIDTH	2800
HEIGHT	3456
DRY WEIGHT (kg.)	21100
TANK CAPACITY (lt.)	2200

- 1- Steel structure made from steel sheet and steel profiles.
- 2- Canopy and panels made from powder coated sheet steel.



- 3- Emergency stop push button.
- 4- Control panel is mounted on the baseframe . Located at the back of Generator set
- 5- Cables out locations are back of the canopy.
- 6- Corrosion-resistant locks and hinges.
- 7- Oil could be drained via valve and a hose
- 8- Exhaust system on the canopy.
- 9- Special large access doors for easy maintenance
- 10- The cap on the canopy provides easy access to radiator cap.
- 11- Lifting points similar to ISO container , located on each top corner of the Canopy.
- 12- Sound proofing materials
- 13- Ventilation louveres
- 14- Integrated ladder built in to side of the canopy allows access to the top of the canopy

## INTRODUCTION

Sound-attenuated and weather-protective enclosures for generating sets from Aksa, meet even the sound requirements and provide optimum protection from inclement weather and development by our specialist acoustic engineers. Our modular designed sound insulated canopies provide ease of access for servicing and general maintenance and interchangeable components permitting on-site repair. Enclosures are designed to optimize genset cooling performance, providing you with confidence that genset ratings and ambient capability.

## Control Panel

Control Module	DSE
Control Module Model	DSE 7320
Communication Ports	MODBUS

- 1. Menu navigation buttons
- 2. Close mains button
- 3. Main Status and instrumentation display
- 4. Alarm LED's
- 5. Close generator button
- 6. Status LED's
- 7. Operation selecting buttons

## Devices

DSE 7320 Auto Mains Failure control module

Static battery charger

Emergency stop push button and fuses for control circuits

## CONSTRUCTION and FINISH

Components installed in a sheet steel enclosure.

Phosphate chemical, pre-coating of steel provides corrosion resistant surface

Polyester composite powder topcoat forms a high gloss and extremely durable finish

Lockable hinged panel door provides for easy component access

## INSTALLATION

Control panel is mounted to gen-set baseframe on robust steel stand or power module. Located on the side of generating set with proper panel visibility.

## GENERATING SET CONTROL UNIT

The DSE 7320 control module is a standard addition to our generator sets from 220 kVA upwards and it has been designed to start and stop diesel and gas generating sets that include electronic and non-electronic engines.



The DSE 7320 includes the additional capability of being able to monitor a mains (utility) supply and is, therefore, suitable for controlling a standby generating set in conjunction with an automatic transfer switch.

The DSE7320 also indicates operational status and fault conditions, automatically shutting down the generating set and indicating faults by means of its LCD display on the front panel.

### STANDARD SPECIFICATIONS

Microprocessor controlled

- 132 x 64 pixel LCD display makes information easy to read
- Front panel programming and also via PC software
- Soft touch membrane keypad and five key menu navigation
- Remote communications via RS232, RS485 and ethernet.
- Event logging (50) showing date and time
- Multiple date and time engine exercise mode and maintenance scheduler
- Engine block heater control.
- Controls; stop, manual, auto, test, start, mute lamb test/transfer to generator, transfer to mains, menu navigation.

### Instruments

#### ENGINE

Engine speed

Oil pressure

Coolant temperature

Run time Battery volts

Engine maintenance due

#### GENERATOR

Voltage (L-L, L-N)

Current (L1-L2-L3)

Frequency

Earth current

kW

Pf

kVA<sub>r</sub>

kWh, kVA<sub>h</sub>, kVA<sub>r</sub>h

Phase sequence

#### MAINS

Voltage (L-L, L-N)

Frequency

#### WARNING

Charge failure

Battery under voltage

Fail to stop



Low fuel level (opt.)

kW overload

Negative phase sequence

Loss of speed signal

PRE-ALARMS

Low oil pressure

High engine temperature

Low engine temperature

Over /Under speed

Under/over generator frequency

Under/over generator voltage

ECU warning

SHUTDOWNS

Fail to start

Emergency stop

Low oil pressure

High engine temperature

Low coolant level

Over /Under speed

Under/over generator frequency

Under/over generator voltage

Oil pressure sensor open

Phase rotation

ELECTRICAL TRIP

Earth fault

kW overload

Generator over current

Negative phase sequence

### Options

High oil temperature shut down

Low fuel level shut down

Low fuel level alarm

High fuel level alarm

EXPANSION MODULES

Additional LED module (2548)

Expansion relay module (2157)

Expansion input module (2130)

### Standards



Electrical Safety / EMC compatibility

BS EN 60950 Electrical business equipment

BS EN 61000-6-2 EMC immunity standard

BS EN 61000-6-4 EMC emission standard

### STATIC BATTERY CHARGER

Battery charger is manufactured with switching-mode and SMD technology and it has high efficiency.

Battery charger models' output V-I characteristic is very close to square

2405 has fully output short circuit protection and it can be used as a current source.

2405 charger has high efficiency, long life, low failure rate, lightweight and low heat radiated in accordance with linear alternatives.

The charger is fitted with a protection diode across the output.

Charge fail output is available.

Connect charge fail relay coil between the positive output and CF output.

Input: 196-264V.

Output: 27,6V 5A or 13,8V 5A.

### STANDARD SPECIFICATIONS

- Water cooled diesel engine
- Radiator with mechanical fan
- Protective grille for rotating and hot parts
- Electric starter and charge alternator
- Starting battery (with lead acid) including rack and cables
- Engine coolant heater
- Steel base frame and anti-vibration isolators
- Spare external fuel tank (open set)
- Flexible fuel connection hoses
- Single bearing, class H alternator
- Industrial exhaust silencer and steel bellows supplied separately
- Static battery charger
- Manual for application and installation
- Generators Sets' voltage and frequency regulation comply with ISO 8528-5

### OPTIONAL EQUIPMENTS

#### ENGINE

Remote Radiator Cooling

Fuel-Water Separator Filter

Oil heater

#### ALTERNATOR

Anti-Condensation Heater

Over sized alternator

PMG excitation + AVR



Main line circuit breaker

#### CONTROL SYSTEM

Automatic synchronising and power control system ( multi gen-set Parallel )

Paralel system with mains.

Transition synchronization with mains

Remote annunciator panel

Alarm output relays

Remote communication with modem

Earth fault, single set

Charge Ammeter

#### TRANSFER SWITCH

Three or four pole contactor

Three or four pole motor operated circuit breaker

#### OTHER ACCESSORIES

Main Fuel Tank

Automatic or manual fuel filling system

Electrical oil drain pump

Low and high fuel level alarm

Residential silencer

Enclosure: weater protective or sound attenuated

Duct adapter ( on radiator)

Inlet and outlet motorised louvers

Inlet and outlet acoustic baffles

Tool kit for maintenance

1500/3000 hours maintenance kit

Supplied with oil and coolant - 30 °C

#### AKSA CERTIFICATES

- TS ISO 8528
- CE
- SZUTEST
- 2000/14/EC