



## 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, 60 Hz, PF 0.8

Voltage	STANDBY RATING (ESP)		PRIME RATING (PRP)		Standby Amper
	kW	kVA	kW	kVA	
380/220	1900,00	2375,00	1728,00	2160,00	3608,55
480/277	2000,00	2500,00	1815,20	2269,00	

**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 2500-6
Frequency (Hz)	60
Fuel Type	Diesel
Engine Made and Model	CUMMINS QSK 60-G7 - 60Hz
Alternator Made and Model	ECO 46-1L/4 A - 60Hz
Control Panel Model	DSE 7320
Canopy	AK 99 - External Removable Silencer

## ENGINE SPECIFICATIONS

Engine	CUMMINS
Engine Model	QSK 60-G7 - 60Hz
Number of Cylinder (L)	16 cylinders - V type
Bore (mm.)	159
Stroke (mm.)	190
Displacement (lt.)	60.2
Aspiration	Turbo Charged and One Pump Two Loop
Compression Ratio	14.5:1
RPM (d/dk)	1800
Oil Capacity (Total With Filter) (lt)	280
Standby Power (kW/HP)	2180/2922
Fuel Type	Diesel
Type of Fuel Pump	Cummins PT
Governor System	Electronic
Operating Voltage (Vdc)	24 Vdc
Cooling Method	Water Cooled
Coolant Capacity (engine only / with radiator) (lt)	682



Air Filter Dry Type

Fuel Cons. Prime With %100 Load (lt/hr) 471

Fuel Cons. Prime With %75 Load (lt/hr) 360

Fuel Cons. Prime With %50 Load (lt/hr) 254

### ALTERNATOR CHARACTERISTICS

Manufacturer Mecc Alte

Alternator Made and Model ECO 46-1L/4 A - 60Hz

Frequency (Hz) 60

Power (kVA) 2200

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) 3805

COOLING AIR (m<sup>3</sup>/min) 162

### Open Gen.Set Dimensions (mm)

LENGTH 5710

WIDTH 2280

HEIGHT 3220

DRY WEIGHT (kg.) 15500

TANK CAPACITY (lt.) 2000

### Gen.Set Canopy Dimensions (mm)

LENGTH 9000

WIDTH 2800

HEIGHT 3307

DRY WEIGHT (kg.) TBD

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 the 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. Fuel tank is at front of the canopy ,easy access to the fuel tank via lockable door.
14. Integrated ladder built in toside 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
	<ol style="list-style-type: none"><li>1. Menu navigation buttons</li><li>2. Close mains button</li><li>3. Main Status and instrumentation display</li><li>4. Alarm LED's</li><li>5. Close generator button</li><li>6. Status LED's</li><li>7. Operation selecting buttons</li></ol>

## Devices

DSE, model 7320 Auto Mains Failure control module Static battery charger Emergency stop push button and fuses for control circuits

## CONSTRUCTION and FINISH

Comonents installed in sheet steel enclosure.

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

Polyester composite powder topcoat forms high gloss and extremely durable finish

Lockable hinged panel door provides for easy component access

## INSTALLATION

Control panel is mounted generating set baseframe on robust steel stand or power module. Located at side of generating set with properly 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, manuel, 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, kVAh, 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 over load
  - 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

SHUT DOWNS

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 over load

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

Editional LED module (2548)

Expension 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 shot circuit protection and it can be used as a current source.

2405 charger has high efficiency, long life, low failure rate, light weight 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 positive output and CF output.

Input: 196-264V.

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

## STANDARD SPECIFICATIONS

- Heavy duty, 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

## OPTIONAL EQUIPMENTS

### TRANSFER SWITCH

- Three or four pole motor operated circuit breaker
- Four Pole Contactor
- Three Pole Contactor

### OTHER ACCESSORIES

- Tool kit for maintenance
- Inlet and outlet acoustic baffles
- Inlet and outlet motorised louvers
- Automatic transfer switch
- Main Fuel Tank
- Supplied with oil and coolant - 30 °C
- Low and high fuel level alarm
- Electrical oil drain pump
- Automatic or manual fuel filling system
- Duct adapter ( on radiator)
- Enclosure: weater protective or sound attenuated
- Residential silencer

### CONTROL SYSTEM



- Remote communication with modem

- Alarm output relays

- Charge Ammeter

- Earth fault, single set

- Remote relay output

- Paralel system with mains.

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

Parallel )

- Remote annunciator panel

- Transition synchronization with mains

#### ENGINE

- Oil heater

- Fuel-Water Seperator Filter

- Remote Radiator Cooling

#### ALTERNATOR

- Main line circuit breaker

- Over sized alternator

- Anti-Condensation Heater

#### AKSA CERTIFICATES

- TS ISO 8528

- CE

- SZUTEST

- 2000/14/EC