



## 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	176,00	220,00	160,00	200,00	317,55

**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	AD 220
Frequency (Hz)	50
Fuel Type	Diesel
Engine Made and Model	HYUNDAI P086TI
Alternator Made and Model	AK 4160
Control Panel Model	DSE 7320
Canopy	AK 50 TRP

## ENGINE SPECIFICATIONS

Engine	HYUNDAI
Engine Model	P086TI
Number of Cylinder (L)	6 cylinders - in line
Bore (mm.)	111
Stroke (mm.)	139
Displacement (lt.)	8.071
Aspiration	Turbo Charged and Intercooled (Air to Air)
Compression Ratio	16.4:1
RPM (d/dk)	1500
Oil Capacity (Total With Filter) (lt)	15.5
Standby Power (kW/HP)	199/270
Prime Power	177/240
Block Heater QTY	1
Block Heater Power (Watt)	15000
Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Zexel P inline
Governor System	Electronic
Operating Voltage (Vdc)	24 Vdc



Battery and Capacity (Qty/Ah)	2x85
Charge Alternator (A)	45
Cooling Method	Water Cooled
Cooling Fan Air Flow (m3/min)	250
Coolant Capacity (engine only / with radiator) (lt)	14/35.1
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (lt/hr)	43.1
Fuel Cons. Prime With %75 Load (lt/hr)	31.7
Fuel Cons. Prime With %50 Load (lt/hr)	21.1

### ALTERNATOR CHARACTERISTICS

Manufacturer	Aksa
Alternator Made and Model	AK 4160
Frequency (Hz)	50
Power (kVA)	200
Voltage (V)	400
Phase	3
A.V.R.	SX440
Voltage Regulation	(+/-)1%
Insulation System	H
Protection	IP22
Rated Power Factor	0.8
WEIGHT COMP. GENERATOR (Kg)	626
COOLING AIR (m <sup>3</sup> /min)	30.84

### Open Gen.Set Dimensions (mm)

LENGTH	2425
WIDTH	1150
HEIGHT	1847
DRY WEIGHT (kg.)	1830
TANK CAPACITY (lt.)	380

### Gen.Set Canopy Dimensions (mm)

LENGTH	3404
WIDTH	1157
HEIGHT	1930
DRY WEIGHT (kg.)	2205
TANK CAPACITY (lt.)	380

1. Steel structures
2. Emergency stop push button
3. Control panel is right side of the set.
4. Corrosion.resistant locks and hinges



5. Sump drains valves
6. Sound proof foam material
7. Lifting Points

## INTRODUCTION

Sound-attenuated and Weather-protective Enclosures 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, 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 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

- 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
- Base frame design incorporates an integral fuel tank and anti-vibration isolators
- Flexible fuel connection hoses
- Single bearing, class H alternator
- Industrial exhaust silencer and steel bellows supplied separately(for open sets)
- Static battery charger
- Manual for application and installation

## OPTIONAL EQUIPMENTS

### ENGINE

Fuel-Water Seperator 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 )

Transition synchronization with mains

Remote annunciator panel

Remote relay output

Alarm output relays

Remote communication with modem

Earth fault, single set

Charge Ammeter

### TRANSFER SWITCH

Three Pole Contactor

Four Pole Contactor

Three or four pole motor operated circuit breaker

### OTHER ACCESSORIES



Main Fuel Tank

Automatic or manual fuel filling system

Manual 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

Trailer

Tool kit for maintenance

1500/3000 hours maintenance kit

Double wall chassis

### **AKSA CERTIFICATES**

- TS ISO 8528

- CE

- SZUTEST

- 2000/14/EC