



## 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	APD 220 BD
Frequency (Hz)	50
Fuel Type	Diesel
Engine Made and Model	AKSA (Powered by Baudouin) A6CRW97TIG1-6M16G2D0/S
Alternator Made and Model	AK 4160
Control Panel Model	DSE 7320
Canopy	MS 60 CK

## ENGINE SPECIFICATIONS

Engine	AKSA (Powered by Baudouin)
Engine Model	A6CRW97TIG1-6M16G2D0/S
Number of Cylinder (L)	6 cylinders - in line
Bore (mm.)	126
Stroke (mm.)	130
Displacement (lt.)	9.726
Aspiration	Turbo Charged and Air to Air AfterCooled
Compression Ratio	17:1
RPM (d/dk)	1500
Oil Capacity (Total With Filter) (lt)	30
Standby Power (kW/HP)	204/273
Prime Power	187/251
Block Heater QTY	1
Block Heater Power (Watt)	3000
Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Mechanical
Governor System	Electronic



Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	2x120
Charge Alternator (A)	55
Cooling Method	Water Cooled
Cooling Fan Air Flow (m3/min)	415
Coolant Capacity (engine only / with radiator) (lt)	22/42
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (lt/hr)	43.1
Fuel Cons. Prime With %75 Load (lt/hr)	32.4
Fuel Cons. Prime With %50 Load (lt/hr)	22.4

### 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 (m³/min)	30.84

### Open Gen.Set Dimensions (mm)

LENGTH	2750
WIDTH	1300
HEIGHT	1753
DRY WEIGHT (kg.)	2100

### Gen.Set Canopy Dimensions (mm)

LENGTH	3963
WIDTH	1356
HEIGHT	2171
DRY WEIGHT (kg.)	2900
TANK CAPACITY (lt.)	470

1. Steel structures.
2. Emergency stop push button.
3. Control panel is mounted on the baseframe . Located at the right side of the generator set.
4. Corrosion-resistant locks and hinges.
5. Oil could be drained via valve and a hose



6. Exhaust system in the canopy.
7. Special large access doors for easy maintenance
8. In front and back side special large access doors for easy maintenance
9. Base frame -fuel tank.
10. Lifting points similar to ISO container , located on each top corner of the canopy.
11. The cap on the canopy provides easy access to radiator cap.
12. Sound proofing materials
13. Plastic air intake pockets.

## 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 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

kVAr

kWh, kVAh, kVArh

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
- 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 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 )

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

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

Trailer

Tool kit for maintenance

Automatic transfer switch

**AKSA CERTIFICATES**

- TS ISO 8528

- CE

- SZUTEST

- 2000/14/EC