aksa POWER GENERATION

TSACO توسعه صنایع دیزلی مپنا

# AD 185

## 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 | 148,00 | 185,00 | 134,40 | 168,00 | 267,03 |

**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 perod of operation.

## General Characteristics

| | |
|---|---|
| Model Name | AD 185 |
| Frequency (Hz) | 50 |
| Fuel Type | Diesel |
| Engine Made and Model | DOOSAN P086TI-1 |
| Alternator Made and Model | AK 4140 |
| Control Panel Model | DSE 7320 |
| Canopy | AK 50 |

## ENGINE SPECIFICATIONS

| | |
|---|---|
| Engine | DOOSAN |
| Engine Model | P086TI-1 |
| 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 |

| | |
|---|---|
| Fuel Type | Diesel |
| Governor System | Electronic |
| Operating Voltage (Vdc) | 24 Vdc |
| Cooling Method | UNKNOWN |
| Cooling Fan Air Flow (m3/min) | 250 |
| Coolant Capacity (engine only / with radiator) (lt) | /44 |
| Air Filter | UNKNOWN |
| Fuel Cons. Prime With %100 Load (lt/hr) | 35.4 |
| Fuel Cons. Prime With %75 Load (lt/hr) | 26.7 |
| Fuel Cons. Prime With %50 Load (lt/hr) | 18.7 |

## ALTERNATOR CHARACTERISTICS

| | |
|---|---|
| Manufacturer | Aksa |
| Alternator Made and Model | AK 4140 |
| Frequency (Hz) | 50 |
| Power (kVA) | 175 |
| VOLTAGE (V) | 400 |
| Phase | 3 |
| A.V.R. | SX460 |
| Voltage Regulation | (+/-)1.5% |
| Insulation System | H |
| Protection | IP22 |
| Rated Power Factor | 0,8 |
| WEIGHT COMP. GENERATOR (Kg) | 530 |
| COOLING AIR ($m^3$/min) | 30.84 |

## Open Gen.Set Dimensions (mm)

| | |
|---|---|
| LENGTH | 2300 |
| WIDTH | 1150 |
| HEIGHT | 1777 |
| DRY WEIGHT (kg.) | 380 |
| TANK CAPACITY (lt.) | 380 |

## Gen.Set Canopy Dimensions (mm)

| | |
|---|---|
| LENGTH | 3402 |
| WIDTH | 1217 |
| HEIGHT | 2032 |
| DRY WEIGHT (kg.) | 380 |
| 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 metarial
**7.** Lifting Points

## INTRODUCTION

Sound–attenuated and Weather-protective Enclosures Sound-attenuated and weather protective enclosures for generating sets from Aksa, meet event 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, 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 conrol module is a standard addition to our generator sets from 220 kVA upwards and it has been designed to start and stop diesel andgas 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

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 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**

Elecrical 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 efficincy.

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

2405 has fully output shot circuit protection and ıt 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
- Generators Sets' voltage and frequency regulation comply with ISO 8528-5
- Generators Sets' can take 100% load at one step according to NFPA110

## OPTIONAL EQUIPMENTS

ENGINE

Fuel-Water Seperator Filter

Low water level alarm

Oil heater

ALTERNATOR

Anti-Condensation Heater

Over sized alternator

Main line circuit breaker

CONTROL SYSTEM

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 |
| 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 |
| Supplied with oil and coolant - 30 °C |
| Battery isolating switch |
| Automatic transfer switch |

## AKSA CERTIFICATES

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