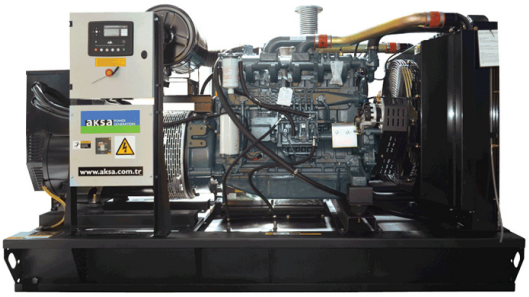

Introduction

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

3 Phase,50 Hz, PF 0.8

Voltage (V)	STANDBY RATING (ESP)		PRIME RATING (PRP)		STANDBY CURRENT (A)
	kW	kVA	kW	kVA	
400 / 231	176.0	220	160.0	200	318

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 Make and Model	Hyundai P086TI
Alternator Make and Model	Aksa AK 4160
Control Panel Model	DSE 7320
Canopy	AK 50 TRP
Noise Level @1m , @7m (dB(A))	83.8 / 74.1

Engine Specifications

General Data

Manufacturer	Hyundai
Engine Model	P086TI
Number of Cylinders / Type	6 cylinders - in line

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Bore mm (in)	111
Stroke mm (in)	139
Displacement l (cu. In)	8.071
Compression Ratio	16.4:1
Engine Speed (rpm)	1500
Standby Power (kW/hp)	199/270
Prime Power (kW/hp)	177/240
Block Heater (QTY)	1
Block Heater Power (Watt)	15000
Governor System	Electronic
Air Filter	Dry Type
Aspiration	Turbo Charged and Intercooled (Air to Air)

Lubrication System

Oil Capacity l (qal)	15.5
Max. Oil Temperature ºC (F)	120

Fuel System

Fuel Type	Diesel
Injection Type	Direct
Type of Fuel Pump	Zexel P inline

Electrical System

Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	2x85
Charge Alternator (A)	45

Cooling System

Cooling Method	Water Cooled
Coolant Capacity (engine only) l (gal)	14

Exhaust System

Exhaust Gas Flow (m³/min)	34
Exhaust Back Pressure in-Hg (kPa)	5.9
Exhaust Gas Temperature ºC (F)	580
Heat Rejection to Exhaust kW (BTU/min)	170.6

Radiator

Total Coolant Capacity (l)	35.1
Cooling Fan Air Flow m³/min (ft³/min)	250

External Restriction to Cooling Airflow (Pa)	125

Fuel Consumption

Fuel Cons. @100% Prime Load l/h (kg/h)	43.1
Fuel Cons. @75% Prime Load l/h (kg/h)	31.7
Fuel Cons. @50% Prime Load l/h (kg/h)	21.1

Alternator Characteristics

Manufacturer	Aksa
Alternator Model	AK 4160
Frequency (Hz)	50
Power (kVA)	200
Voltage (V)	400
Phase	3
A.V.R.	SX440
Voltage Regulation	1
Insulation Class	H
Protection Class	IP22
Rated Power Factor	0.8
Weight Complete Generator (kg)	626
Cooling Air (m³/min)	30.84

Open Generator Set Dımensıons

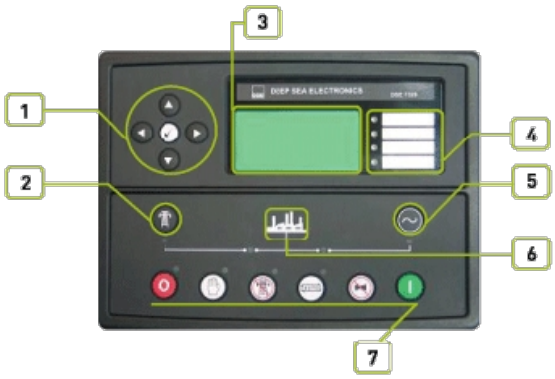
Length mm	2425
Width mm	1150
Height mm	1847
Open Gen.Set Gross Weight Dry kg	1830
Full Tank Capacity (l)	380

Canopy Characteristics

Length mm	3404
Width mm	1157
Height mm	1930
Dry Weight kg	2205
Full Tank Capacity (l)	380

Control Panel

Manufacturer	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

Standard Devices

DSE model 7320, Auto Mains Failure control module, with a highly sophisticated level of new features and functions
Static battery charger, Fuses for control circuits

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.

Construction and Finish

- Components 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

The Control panel is mounted at the generating set baseframe on robust steel stand or power module. Located at side of generating set with properly panel visibility.

Engine

-Engine speed
-Oil pressure
-Coolant temperature
-Run time
-Battery volts
-Engine maintenance due

Shut Down

-Fail to start
-Emergency stop
-Low oil pressure
-High engine temperature
-Low coolant level
-Under/over speed

Warnings

-Charge failure
-Battery under voltage
-Fail to stop
-Low fuel level (opt.)
-kW over load
-Negative phase sequence

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-Under/over generator frequency
-Under/over generator voltage
-Oil pressure sensor open
-Phase rotation

-Loss of speed signal

Generator

-Voltage (L-L, L-N)
-Current (L1-L2-L3)
-Frequency
-Earthcurrent
-kW
-Pf
-kVAr
-kWh, kVAh, kVArh
-Phasesequence

Pre-alarms

-Low oil pressure
-High engine temperature
-Low engine temperature
-Under/over speed
-Under/over generator frequency
-Under/over generator voltage
-ECU warning

Electrical Trip

-Earth fault
-kW over load
-Generator over current
-Negative phase sequence

Mains

-Voltage (L-L, L-N)
-Frequency

Expensions

-Additional LED module (2548)
-Expansion relay module (2157)
-Expansion input module (2130)

Options

- High oil temperature shut down
- Low fuel level shut down
- Low fuel level alarm
- High fuel level alarm

Control Panel Compliance List

- Electrical Safety / Electro Magnetic Compatibility (EMC)
- BS EN 61000-6-2 EMC Generic Immunity Standard
- BS EN 61000-6-4 EMC Generic Emission Standard
- BS EN 60950 Electrical Safety

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 Equipment

- 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

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- 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 Equipment

Engine

- Fuel-Water Seperator Filter
- Oil heater

Alternator

- Anti-Condensation Heater
- Over sized alternator
- PMG excitation + AVR
- Main line circuit breaker

Control Panel

- Automatic synchronising and power control system (Multi gen-set Parallel)
- Parallel system with mains
- Transition synchronization with mains
- Alarm output relays
- Earth fault, single set
- Parallel system with mains
- Remote relay output
- Remote communication with modem
- Charge Ammeter

Transfer Panel

- Three or four pole contactor
- Three or four pole motor operated circuit breaker

Auxiliary Equipment

- Main Fuel Tank
- Automatic or manual fuel filling system
- Electrical or manual oil drain pump
- Low and high fuel level alarm
- Inlet and outlet motorized louvers
- Inlet and outlet acoustic baffles
- Tool kit for maintenance
- 1500/3000 hours maintenance kit
- Supplied with oil and coolant (-30°C)

Exhaust

- Residential Silencer
- Silencer Spark Arrester
- Critical Silencer
- Catalytic Convertor

Canopy

- Galvanized Coating
- ISO Container
- Marine Grade Paint

Optional Alternator and Control Panel

Please contact to your reseller for additional Alternator, Control Panel and Breaker Switch options.

Aksa Certificates

Directive

- 2006/42/EC : Machinery Safety Directive
- 2014/30/EU : Electromagnetic Compatibility Directive
- 2014/35/EU : Low Voltage Directive

Standarts

- TS ISO 8528-5:2022 / TS EN ISO 8528-13:2018 : Reciprocating internal combustion engine-driven alternating

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current generating sets- Part:13: Safety

Quality Management Systems
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
ISO 50001:2018
ISO 27001:2013
ISO 10002:2018

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