



INTRODUCTION

Aksa power generation system, providing optimum performance, and reliability, for stationary standby, prime power, and continuous duty applications. All generator sets are factory built, 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	74.40	93.00	67.20	84.00	134.23

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 93 (EU)
Frequency (Hz)	50
Fuel Type	Diesel
Engine Make and Model	DOOSAN D1146
Alternator Make and Model	Stamford UCI224G
Control Panel Model	DSE 6120
Canopy	AK49 EU (RAL-1015)
Noise Level (@1m./@7m.) (dB(A))	83.5/73.9

ENGINE SPECIFICATIONS

General Data	
Manufacturer	DOOSAN
Engine Model	D1146
Number of Cylinders (L)	6 cylinders - in line
Bore (mm.)	111
Stroke (mm.)	139
Displacement (lt.)	8.071
Compression Ratio	17.5:1
Engine Speed (rpm)	1500



Standby Power (kW/HP)	85/116
Prime Power (kW/HP)	77/105
Block Heater QTY	1
Block Heater Power (Watt)	1500
Governor System	Mechanic
Air Filter	Dry Type

Lubrication System

Oil Capacity (Total With Filter) (lt)	15.5
Max. Oil Temperature (°C)	120

Fuel System

Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Zexel in-line "AD" type

Electrical System

Operating Voltage (Vdc)	24
Battery and Capacity (Qty/Ah)	2x66
Charge Alternator (A)	45

Cooling System

Aspiration	Naturally Aspirated
Cooling Method	Water Cooled
Coolant Capacity (engine only) (lt)	14

Exhaust System

Exhaust Gas Flow (m ³ /min.)	-
Exhaust Back Pressure (kPa)	5.9
Exhaust Gas Temp. (°C)	-
Heat Rejection to Exhaust (kW)	73.3

Radiator

Total Coolant Capacity (lt)	29.7
Cooling Fan Air Flow (m ³ /min.)	200
External Restriction to Cooling Airflow (Pa)	125

Fuel Consumption

Fuel Cons. Prime With %100 Load (lt/hr)	20.6
Fuel Cons. Prime With %75 Load (lt/hr)	15.9
Fuel Cons. Prime With %50 Load (lt/hr)	11.3



ALTERNATOR CHARACTERISTICS

Manufacturer	Stamford
Alternator Model	UCI224G
Frequency (Hz)	50
Power (kVA)	85
Voltage (V)	400
Phase	3
Regulator	AS460
Voltage Regulation	(+/-)1%
Insulation System	H
Protection	IP23
Rated Power Factor	0.8
Weight Complete Generator (kg)	383
Temperature Rise	H

CANOPY SPECIFICATIONS

Length (mm)	3402
Width (mm)	1217
Height (mm)	1954
Dry Weight (kg.)	1840
Tank Capacity (lt.)	320

CONTROL PANEL

Manufacturer	DSE
Control Module Model	DSE 6120
Communication Ports	CANBUS



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 6120, Auto Mains Failure control module, Static battery charger, Battery charger input 198-264 volt, output 27,6V 5A (24V) or 13,8 Volt 5A (12V), Emergency stop push button and fuses for control circuits.

Control Unit

- The DSE 6120 module has been designed to monitor generator frequency, volt, current, engine oil pressure, coolant temperature running hours and battery volts.
- Module monitors the mains supply and switch over to the generator when the mains power fails.
- The DSE6120 also indicates operational status and fault conditions, Automatically shutting down the Gen. Set and giving true first up fault condition of Gen. Set failure. The LCD display indicates the fault.



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 and hinged panel door provides easy access to components.

Installation

Control panel is mounted on baseframe with steel stand. Located at the right side of the generator set (When you look at the Gen.Set. from Alternator side)

Standard Specifications

- Microprocessor controlled
- LCD display makes information easy to read
- Automatically transfers between mains (utility) and generator power
- Manual programming on front panel
- User-friendly set-up and button layout
- Remote start
- Event logging (50) showing date and time
- Controls: Stop/Reset, Manual, Auto, Test, Start, buttons. An additional push button next to the LCD display is used to scroll through the modules' metering displays

Instruments

Engine

- Engine speed
- Oil pressure
- Coolant temperature
- Run time
- Battery volts
- Configurable timing

Generator

- Voltage (L-L, L-N)
- Current (L1-L2-L3)
- Frequency
- Gen. Set ready
- Gen. Set enabled

Shut Downs

- Fail to start
- Emergency stop
- Low oil pressure
- High coolant temperature
- Over /Under speed
- Under/over generator frequency
- Under/over generator voltage
- Oil pressure sensor open
- Coolant temperature sensor open

Mains

- Mains ready
- Mains enabled

Warning

- Charge failure.
- Battery Low/High voltage.
- Fail to stop.
- Low /High generator voltage
- Under /Over generator frequency
- Over /Under speed
- Low oil pressure
- High coolant temperature

Electrical Trip

- Generator over current

Options

- Flexible sensor can be controlled with temperature, pressure, percentage (warning/shutdown/electrical trip)
- Local setting parameters and monitoring from PC to control module with USB connection (max 6 mt).

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 and output is 5 amper, 13,8 V for 12 volt and 27,6 V for 24 V . Input 198 - 264 volt AC.
- The charger is fitted with a protection diode across the output.
- Connect charge fail relay coil between positive output and CF output.
- They are equipped with RFI filter to reduce electrical noise radiated from the device.
- Galvanically isolated input and output typically 4kV for high reliability.

STANDARD EQUIPMENT

- Water cooled, Diesel engine
- Mounted radiator with mechanical fan drive
- Protective grille for rotating and hot parts
- Electric starter and charge alternator
- Lead acid starting battery (with battery switch) including rack and cables
- Engine coolant heater
- Bunded base frame design incorporates an integral fuel tank, anti-vibration isolators and forklift pockets
- Flexible fuel connection hoses
- Single bearing, class H alternator with Anti-condensation Heater
- Industrial exhaust silencer and steel bellows supplied separately (for open sets)
- Static battery charger and battery switch
- Non-ferro plate for alternator and panel side
- 4P Circuit Breaker
- Manual for application and installation
- Generators Sets' voltage and frequency regulation comply with ISO 8528-5

OPTIONAL EQUIPMENT

Engine

- Fuel-Water Separator Filter
- Oil heater

Transfer Switch

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

Alternator

- Over sized alternator
- Main line circuit breaker

Auxiliary Equipment

- Main Fuel Tank
- Automatic or manual fuel filling system
- Manual oil drain pump
- Electrical 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
- Critical Silencer
- Silencer Spark Arrester
- Catalytic Convertor



Control System

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

Canopy

- ISO Container
- Galvanized Coating
- Marine Grade Paint

Optional Alternator and Control Panel Models

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

AKSA CERTIFICATES

Directives

- 2006/42/EC : Machinery Safety Directive
- 2004/108/EC : Electromagnetic Compatibility Directive
- 2006/95/EC : Low Voltage Directive

Standards

- EN ISO 12100-1:2010 : Safety of machinery -Basic concepts, general principles for design - Risk Assessment and Risk Reduction
- EN ISO 3744:2010 : Acoustics. Determination of sound power levels of noise sources using sound pressure. Engineering method in an essentially free field over a reflecting plane
- EN 60204-1:2018 : Safety of machinery-Electrical equipment of machines General Requirements
- EN ISO 8528-13:2016 : Reciprocating internal combustion engine-driven alternating current generating sets- Part:13: Safety
- BS EN 61000-4-2:2009 : Electromagnetic compatibility (EMC). Testing and Measurement Techniques-Electrostatic Discharge Immunity Test
- BS EN 61000-4-6 : Electromagnetic Compatibility (EMC). Testing and Measurement Techniques-Immunity to Conducted Disturbance Induced by Radio - Frequency Fields
- EN 614-1:2006+A1(2009) : Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles

