

# AD 220

Engine : Doosan  
 Alternator : Mecc Alte  
 Control System : P 732 control system



### ISO8528

This generator set has been designed to meet ISO 8528 regulation.

### SZUTEST

This generator set is manufactured in facilities certified to ISO 9001.



This generator set is available with CE certification.

### 2000/14/EC

Enclosed product is tested EU noise legislation 2000/14/EC

### 3 Phase Ratings, 50 Hz, PF 0,8

Voltage	Standby Rating (ESP)		Prime Rating (PRP)		
	kVA	kW	kVA	kW	Amp
400/230	220,00	176,00	200,00	160,00	288,00

**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. 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. 10 % overload capability is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO 3046.

### STANDARD SPECIFICATIONS

- Water cooled, Diesel engine
- Radiator with mechanical fan
- Protective grille for fan and rotating parts
- Electric starter and charge alternator
- Starting battery (with lead acid) including rack and cables
- Engine jacket cooling 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 belows supplied separately
- Static battery charger
- Manual for use 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

#### OTHER ACCESSORIES

- 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
- Main Fuel Tank

#### TRANSFER SWITCH

- Three Pole Contactor
- Four Pole Contactor

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## ● DIESEL ENGINE SPECIFICATIONS

Manufacturer	Doosan			
Model	P086T1			
No. of Cylinders and Build	6 Cylinder, In Line			
Aspiration and Cooling	Turbo Charged and After Cooled			
Maximum Standby Power	<b>1500 rpm</b>			
	199 kW[266HP]			
Total Displacement	<b>L</b>	8,07		
Bore and Stroke	<b>mm</b>	111X139		
Compression Ratio	16,4:1			
Rated Speed (rpm)	<b>rpm</b>	1500		
Governor	Electronic			
Oil Capacity	<b>L</b>	16,00		
Coolant Capacity	<b>L</b>	49,00		
Intake Air Flow	<b>m³ /min.</b>	12,10		
Radiator Cooling Air	<b>m³ /min.</b>	250		
Exhaust Gas Flow	<b>m³ /min.</b>	34,00		
Exhaust Gas Temperatures	<b>° C</b>	580		
Start System	24 V d.c.			
Fuel Consumption	<b>Load</b>	<b>%100</b>	<b>%75</b>	<b>%50</b>
	<b>L/h</b>	43,10	31,70	21,10

## ● ALTERNATOR SPECIFICATIONS

Make	Mecc Alte			
Model	ECO 38 2SN/4			
Frequency	<b>Hz</b>	50		
Power	<b>kVA</b>	200		
Design	Brushless, 4 poles			
Cos Phi	0,80			
Phase	3			
Voltage	<b>V</b>	400/230		
Current	<b>A</b>	288		
Insulation Class	H			
Temperatur	H			
Stator	2 / 3 steps			
Rotor	Single Bearing System, Flexible Disc			
Excitation System	Electronic ( AVR )			

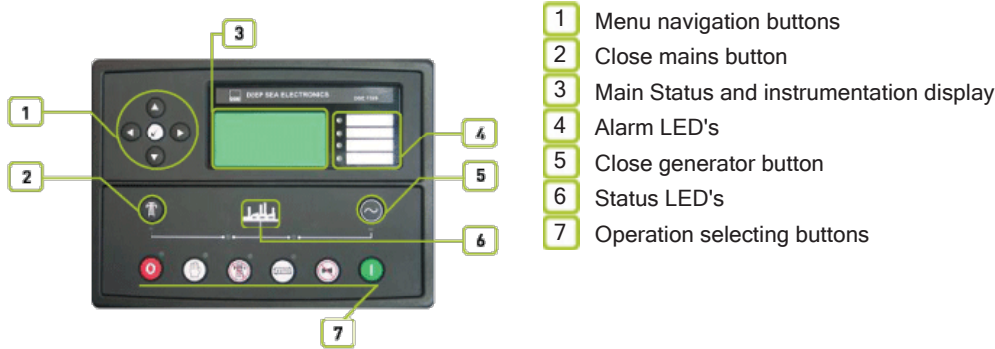
## ● DIEMENSIONS AND WEIGHT

Open Type	Dry Weight	Lenght	Width	Height	Tank Capacity
	kg.	mm.	mm.	mm.	L
AD 220	1850	2680	1150	1630	380
Sound Attenuated Type	Dry Weight	Lenght	Width	Height	Tank Capacity
	kg.	mm.	mm.	mm.	L
AK 50	2350	3400	1210	1850	380

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## 1 P 732 control system - Control System



### 2 Devices

DSE, model 7320 Auto Mains Failure control module  
 Static battery charger 5A, 220/240 volt  
 Emergency stop push button and fuses for control circuits

### 3 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

### 4 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.

## 5 Generating Set Control Unit

The DSE 7320 control module is a standard addition to our generator sets from 250kVA upwards and it have 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 DSE 7320 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 and SMS messaging  
 Event logging (50) showing date and time  
 Multiple date and time engine exercise mode and maintenance scheduler

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## ● 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

## ● Protection Circuits

- WARNING
- Charge failure
- Battery under voltage
- Fail to stop
- Low fuel level (opt.)
- kW over load
- Negative phase sequence
- 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 and output is 5 amper, 24 volt DC. Input 198 - 260 volt AC. 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.

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## AK 50 - Canopy



- 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 (10- 300kVA) 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.

## Standard Specifications

- Compact footprint, low profile design.
- Enclosure, generator set, exhaust system and fuel tank are pre-assembled, pre-integrated and shipped as one package
- Body made from steel components treated with polyester powder coating
- Fire retardant foam insulation
- Easy access to all service points
- Exhaust system inside canopy
- Large doors on each side
- Control panel viewing window in a lockable access door
- Emergency stop push button mounted on enclosure exterior
- Cooling fan and battery charging alternator fully guarded
- Fuel fill and battery can only be reached via lockable access doors.
- Lifting points on the top of canopy and base frame
- Customer options available to meet your applications needs.
- Aksa makes its generating sets' noise level tests in accordance with directive 2000/14/EC validation of the noise level test has been approved by the notified body Szutest

<b>Width</b>	<b>mm.</b>	1210
<b>Lenght</b>	<b>mm.</b>	3400
<b>Height</b>	<b>mm.</b>	1850
<b>Fuel Tank Capacity</b>		380