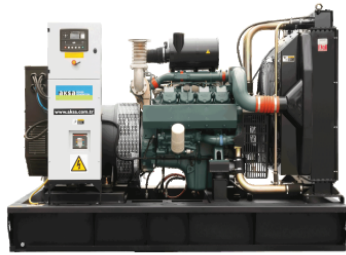


# AD 410

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 according to 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	410,00	328,00	375,00	300,00	541,00

**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 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
- 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
- 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
- Motor Switch

# AD 410

Engine : Doosan  
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## ● DIESEL ENGINE SPECIFICATIONS

Manufacturer		Doosan		
Model		P158LE-1		
No. of Cylinders and Build		8-cylinder, V - Type		
Aspiration and Cooling		Turbo Charged and After Cooled		
Maximum Standby Power		1500 rpm		
		362,00 kW [485,00HP]		
Total Displacement	L	14,600		
Bore and Stroke	mm	128 x 142		
Compression Ratio		15,0:1		
Rated Speed (rpm)	rpm	1500		
Governor		Electronic		
Oil Capacity	L	21,00		
Coolant Capacity	L	88,50		
Intake Air Flow	m <sup>3</sup> /min.	23,50		
Radiator Cooling Air	m <sup>3</sup> /min.	410,00		
Exhaust Gas Flow	m <sup>3</sup> /min.	59,50		
Exhaust Gas Temperature	° C	520,00		
Start System		24 V d.c.		
Fuel Consumption	Load	%100	%75	%50
	L/h	78,70	58,40	40,00

## ● ALTERNATOR SPECIFICATIONS

Make		Mecc Alte
Model		ECO 40-1S/4
Frequency	Hz	50
Power	kVA	400,00
Design		Brushless, 4 poles
Cos Phi		0,80
Phase		3
Voltage	V	400/230
Current	A	577,00
Insulation Class		H
Temperature		H
Stator		2 / 3 steps
Rotor		Single Bearing System, Flexible Disc
Excitation System		Electronic ( AVR )

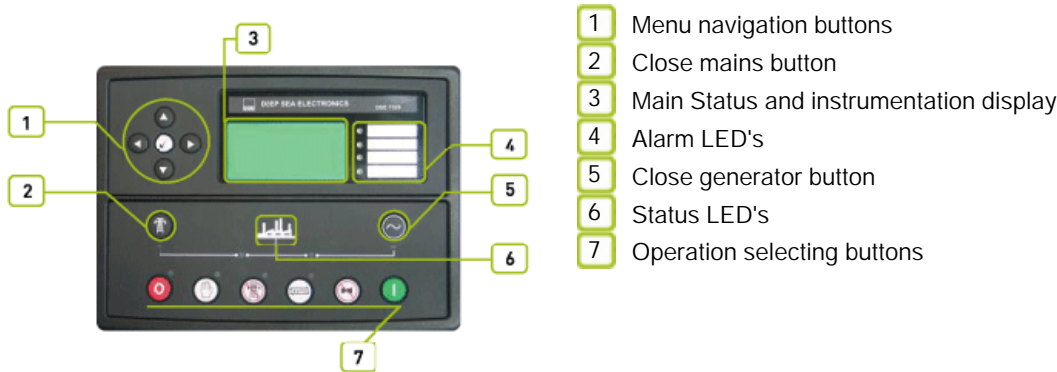
## ● DIEMENSIONS AND WEIGHT

Open Type	Dry Weight	Lenght	Width	Height	Tank Capacity
	kg.	mm.	mm.	mm.	L
AD 410	3030,00	2965,00	1550,00	1994,00	700,00
Canopy	Dry Weight	Lenght	Width	Height	Tank Capacity
	kg.	mm.	mm.	mm.	L
MS 70	4024	4400	1560	2360	700

# AD 410

Engine : Doosan  
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 Control System : P 732 control system

## 1 P 732 control system - Control System



### 2 Devices

DSE, model 7320 Auto Mains Failure control module  
 Static battery charger  
 Emergency stop push button and fuses for control circuits

### 3 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

### 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 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 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
- Engine block heater control.
- Controls; stop, manual, auto, test, start, mute lamb test/transfer to generator, transfer to mains, menu navigation.

# AD 410

Engine : Doosan  
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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
- kVAr
- kWh, kVAh, kVArh
- 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
- 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

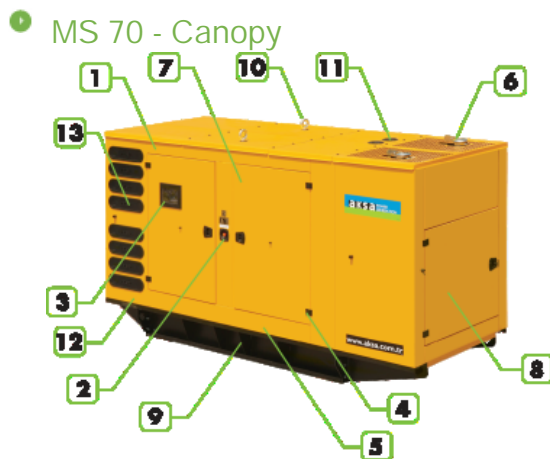
- Electrical Safety / EMC compatibility
- BS EN 60950 Electrical business equipment
- BS EN 61000-6-2 EMC immunity standard
- BS EN 61000-6-4 EMC emission standard

## Static Battery Charger

6UHf mVUf [ Yf ] g'a Ubi ZUM fYX'k ]h' gk ]hV ]b [ !a cXY' UbX' GA 8' hVW' bc' c [ mUbX' ih' Ug' \ ] [ \ YZZ ] bVW' h  
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 & ( \$ ) \ VUf [ Yf' \ Ug' \ ] [ \ YZZ ] VY' bVW' z' cb [ " ] Z' z' " ck' ZU ] i' fY' fU' Y' z' ] [ \ h' k' Y ] [ \ h' i' UbX' " ck' \ YU' h' fUX ] U' fY' X' ] b' U' W' c' fX' UbW' k' ] h' " ] bYUf  
 U' h' Y' fbU' h' j' Yg"  
 H\ Y' VUf [ Yf' ] g' Z' h' Y' X' k' ] h' U' d' f' chVW ] cb' X' ] cXY' U' W' c' gg' h' Y' ci' hdi h' 7' \ Uf [ Y' ZU ] ' ci' hdi h' ] g' Uj' U ] UV' Y' " 7' cbbY' VhVWUf [ Y' ZU ] ' fY' Um  
 Vt' ] VY' h' YY' b' d' cg ] h' j' Y' ci' hdi h' UbX' 7' : ' ci' hdi h'  
 - bdi h' % \* ! & \* ( J "  
 Ci hdi h' & + z' J ) 5' c' f' % z' J ) 5"

# AD 410

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



- 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 canopy provides easy access to radiator cap.
- 12 sound proofing materials
- 13 Plastic air intake pockets.

## 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.

## Standard Specifications

Compact footprint, low profile design.

Enclosure, generator set, exhaust system and fuel tank are pre-ssembled, 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

Width	mm.	1560
Lenght	mm.	4400
Height	mm.	2360
Fuel Tank Capacity	L	700