



## 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 | 168,00               | 210,00 | 152,00             | 190,00 | 303,12        |

**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                | ADG 210        |
| Frequency (Hz)            | 50             |
| Fuel Type                 | Natural Gas    |
| Engine Made and Model     | DOOSAN GE12TI  |
| Alternator Made and Model | ECO 38-1S/4 A  |
| Control Panel Model       | DSE 7320       |
| Canopy                    | MS 60 DOĞALGAZ |

## ENGINE SPECIFICATIONS

|                        |   |
|------------------------|---|
| Engine                 | DOOSAN                                      |
| Engine Model           | GE12TI                                      |
| Number of Cylinder (L) | 6 cylinders - in line                       |
| Bore (mm.)             | 123   |
| Stroke (mm.)           | 155   |
| Displacement (lt.)     | 11.051                                      |
| Aspiration             | Turbo Charged and Intercooled(Water to Air) |
| Compression Ratio      | 10.5:1                                      |
| RPM (d/dk)             | 1500  |



|  |              |
|--|--------------|
| Oil Capacity (Total With Filter) (lt)                | 25           |
| Standby Power (kW/HP)                                | 192/262      |
| Prime Power  | 175/238      |
| Block Heater QTY                                     | 1            |
| Block Heater Power (Watt)                            | 1500         |
| Fuel Type  | Natural Gas  |
| Operating Voltage (Vdc)                              | 24 Vdc       |
| Battery and Capacity (Qty/Ah)                        | 2x85         |
| Charge Alternator (A)                                | 45           |
| Cooling Method                                       | Water Cooled |
| Cooling Fan Air Flow (m <sup>3</sup> /min)           | 270          |
| Coolant Capacity (engine only / with radiator) (lt)  | 21/162.8     |
| Air Filter   | Dry Type     |
| Fuel Cons. Prime With %100 Load (m <sup>3</sup> /hr) | 43.4         |
| Fuel Cons. Prime With %75 Load (m <sup>3</sup> /hr)  | 34.3         |
| Fuel Cons. Prime With %50 Load (m <sup>3</sup> /hr)  | 26.3         |

#### ALTERNATOR CHARACTERISTICS

|                                   |               |
|-----------------------------------|---------------|
| Manufacturer                      | Mecc Alte     |
| Alternator Made and Model         | ECO 38-1S/4 A |
| Frequency (Hz)                    | 50            |
| Power (kVA)                       | 180           |
| VOLTAGE (V)                       | 400           |
| Phase                             | 3             |
| A.V.R.                            | DSR           |
| Voltage Regulation                | (+/-)1%       |
| Insulation System                 | H             |
| Protection                        | IP23          |
| Rated Power Factor                | 0.8           |
| WEIGHT COMP. GENERATOR (Kg)       | 510           |
| COOLING AIR (m <sup>3</sup> /min) | 32            |

#### Open Gen.Set Dimensions (mm)

|                  |      |
|------------------|------|
| LENGTH           | 2970 |
| WIDTH            | 1300 |
| HEIGHT           | 1710 |
| DRY WEIGHT (kg.) | 2320 |

#### Gen.Set Canopy Dimensions (mm)

|        |      |
|--------|------|
| LENGTH | 3960 |
| WIDTH  | 1010 |



|                  |      |
|------------------|------|
| HEIGHT           | 2100 |
| DRY WEIGHT (kg.) | 2900 |

## INTRODUCTION

No Data

### 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 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.

### 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, manual, 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

kVA<sub>r</sub>

kWh, kVAh, kVA<sub>r</sub>h

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)  
Expansion 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

2405 has fully output short 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 SPECIFICATIONS

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## OPTIONAL EQUIPMENTS

### ENGINE

Remote Radiator Cooling

Low Coolant level alarm

Oil heater

### ALTERNATOR

Anti-Condensation heater

Over sized alternator

Single Phase ( 4 lead)

Main line circuit breaker

### CONTROL SYSTEM

Automatic synchronising and power control system ( multi gen-set Parallel )

Paralel system with mains.

Remote annunciator panel

Uzağa alarm paneli

Alarm output relays

Remote communication with modem

Earth fault, single set

Charging ammeter

### TRANSFER ANAHTARI

Four Pole Contactor

### WISE ACCESSORIES

Manual oil drain pump

Electrical oil drain pump

Enclosure: weater protective or sound attenuated

Duct adapter ( on radiator)

Inlet and outlet motorised louvers

Tool kit for maintenance

1500/3000 hours maintenance kit

Supplied with oil and coolant - 30 °C

Automatic transfer switch

## AKSA CERTIFICATES



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