



## 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, 60 Hz, PF 0.8

Voltage	STANDBY RATING (ESP)		PRIME RATING (PRP)		Standby Amper
	kW	kVA	kW	kVA	
380/220	720,00	900,00	656,00	820,00	1367,45
480/277	816,00	1020,00	736,00	920,00	

**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 8528-1. 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	AC 1020-6
Frequency (Hz)	60
Fuel Type	Diesel
Engine Made and Model	CUMMINS QSK23-G3 60 Hz
Alternator Made and Model	ECO 43-1S/4 A - 60Hz
Control Panel Model	DSE 7320
Canopy	AK 90

### ENGINE SPECIFICATIONS

Engine	CUMMINS
Engine Model	QSK23-G3 60 Hz
Number of Cylinder (L)	6 cylinders - in line
Bore (mm.)	170
Stroke (mm.)	170
Displacement (lt.)	23.15
Aspiration	Turbo Charged and Charge Air Cooled
Compression Ratio	16.0:1
RPM (d/dk)	1800
Oil Capacity (Total With Filter) (lt)	103
Standby Power (kW/HP)	895/1200
Prime Power	809/1085
Block Heater QTY	1
Block Heater Power (Watt)	3000
Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Cummins HPI-PT



Governor System	Electronic
Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	2x143
Charge Alternator (A)	35
Cooling Method	Water Cooled
Cooling Fan Air Flow (m3/min)	625,8
Coolant Capacity (engine only / with radiator) (lt)	46,5/120
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (lt/hr)	189
Fuel Cons. Prime With %75 Load (lt/hr)	139
Fuel Cons. Prime With %50 Load (lt/hr)	97

### ALTERNATOR CHARACTERISTICS

Manufacturer	Mecc Alte
Alternator Made and Model	ECO 43-1S/4 A - 60Hz
Frequency (Hz)	60
Power (kVA)	960
Voltage (V)	480
Phase	3
A.V.R.	DER1
Voltage Regulation	(+/-)0.5%
Insulation System	H
Protection	IP23
Rated Power Factor	0.8
WEIGHT COMP. GENERATOR (Kg)	1870
COOLING AIR (m <sup>3</sup> /min)	108

### Open Gen.Set Dimensions (mm)

LENGTH	4121
WIDTH	1705
HEIGHT	2253
DRY WEIGHT (kg.)	5950
TANK CAPACITY (lt.)	1500

### Gen.Set Canopy Dimensions (mm)

LENGTH	6500
WIDTH	2200
HEIGHT	2350
DRY WEIGHT (kg.)	9300
TANK CAPACITY (lt.)	1100

1. Steel structure made from steel sheet and steel



- profiles.
- 2. canopy and panels made from powder coated sheet steel.
- 3. Emergency stop push button.
- 4. Control panel is mounted on the baseframe . Located at the right side of the generator set.
- 5. Cables out locations are under or back of the canopy.
- 6. Corrosion.resistant locks and hinges.
- 7. oil could be drained via valve and a hose
- 8. Exhaust system in the canopy.
- 9. special large access doors (marine type) for easy maintenance
- 10. Fuel tank is at front of the canopy ,easy access to the fuel tank via lockable door.
- 11. Lifting points similar to ISO container , located on each top corner of the canopy.
- 12. the cap on the canopy provides easy access to radiator cap.
- 13. sound proofing materials
- 14. Integrated ladder built in to side of the canopy allows access to the top of the canopy.

## INTRODUCTION

Sound-attenuated and weather protective enclosures for generating sets from Akxa, 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 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.

### Control Panel

Control Module	DSE
Control Module Model	DSE 7320
Communication Ports	MODBUS
	<ol style="list-style-type: none"> <li>1. Menu navigation buttons</li> <li>2. Close mains button</li> <li>3. Main Status and instrumentation display</li> <li>4. Alarm LED's</li> <li>5. Close generator button</li> <li>6. Status LED's</li> <li>7. Operation selecting buttons</li> </ol>

### Devices

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

## 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

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 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.

### 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, kVA<sub>h</sub>, 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

- 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(for open sets)
- Static battery charger
- Manual for application and installation

### OPTIONAL EQUIPMENTS

#### TRANSFER SWITCH

- Three or four pole motor operated circuit breaker
- Four Pole Contactor
- Three Pole Contactor

#### OTHER ACCESSORIES

- Tool kit for maintenance
- Trailer
- Inlet and outlet acoustic baffles
- Automatic transfer switch
- Main Fuel Tank



- Supplied with oil and coolant - 30 °C
- Inlet and outlet motorised louvers
- Low and high fuel level alarm
- Electrical oil drain pump
- Automatic or manual fuel filling system
- Duct adapter ( on radiator)
- Enclosure: weater protective or sound attenuated
- Residential silencer

#### CONTROL SYSTEM

- Remote communication with modem
- Alarm output relays
- Charge Ammeter
- Earth fault, single set
- Remote relay output
- Paralel system with mains.
- Automatic synchronising and power control system ( multi gen-set

#### Parallel )

- Remote annunciator panel
- Transition synchronization with mains

#### ENGINE

- Oil heater
- Fuel-Water Seperator Filter

#### ALTERNATOR

- Main line circuit breaker
- Over sized alternator
- Anti-Condensation Heater

#### AKSA CERTIFICATES

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