

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

3 Phase,50 Hz, PF 0.8

Voltage (V)	STANDBY RATING (ESP)		PRIME RATING (PRP)		STANDBY CURRENT (A)
	kW	kVA	kW	kVA	
400 / 231	40.0	50	36.80	46	72

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	APG 50 LPG
Frequency (Hz)	50
Fuel Type	LPG
Engine Make and Model	PSI 4.3L (4X)_ APG50 LPG
Alternator Make and Model	Mecc Alte ECP 32-1M/4 C
Control Panel Model	DSE 6120
Canopy	AUL3

Engine Specifications

General Data

Manufacturer	PSI
Engine Model	4.3L (4X)_ APG50 LPG
Number of Cylinders / Type	6 cylinders - V type
Bore mm (in)	101,6 (4)
Stroke mm (in)	88 (3,5)

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Displacement l (cu. In)	4,3 (262)
Compression Ratio	9.8:1
Engine Speed (rpm)	1500
Standby Power (kW/hp)	50,7 (68)
Prime Power (kW/hp)	45,7 (61,2)
Block Heater (QTY)	1
Block Heater Power (Watt)	500
Governor System	ECU
Air Filter	Dry Type
Aspiration	Naturally Aspirated

Lubrication System

Oil Capacity l (qal)	4,3 (1,1)
Max. Oil Temperature ºC (F)	121 (250)

Fuel System

Fuel Type	LPG
Injection Type	Spark-Ignited
Type of Fuel Pump	-

Electrical System

Operating Voltage (Vdc)	12 Vdc
Battery and Capacity (Qty/Ah)	1 / 55

Cooling System

Cooling Method	Water Cooled
Coolant Capacity (engine only) l (gal)	7,3 (1,93)

Exhaust System

Exhaust Gas Flow (m³/min)	10,3

Fuel Consumption

Fuel Cons. @100% Prime Load l/h (kg/h)	21,6 (11)

Alternator Characteristics

Manufacturer	Mecc Alte
Alternator Model	ECP 32-1M/4 C
Frequency (Hz)	50

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Power (kVA)	50
Voltage (V)	400
Phase	3
A.V.R.	DSR
Voltage Regulation	1
Insulation Class	H
Protection Class	IP23
Rated Power Factor	0.8
Weight Complete Generator (kg)	186
Temperature Rise Class	H
Cooling Air (m³/min)	15.7

Canopy Characteristics

Length mm (ft)	2274 (90)
Width mm (ft)	1062 (42)
Height mm (ft)	1307 (52)

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 input 198-264 volt, output 27,6V 5A (24V) or 13,8 Volt 5A (12V), fuses for control circuits. This Control Module is suitable for a wide variety of single gen-set applications

Control Unit

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- 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 control the 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 corrosion-resistant surface. Polyester composite powder topcoat forms a 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)

Engine

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

Shut Down

- 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

Warnings

- 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

Generator

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

Electrical Trip

- Generator over current

Mains

- Mains ready
- Mains enabled

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).

Control Panel Compliance List

- Electrical Safety / Electro Magenetic Compatibility (EMC)
- BS EN 60950 Electrical Safety
- BS EN 61000-6-2 EMC Generic Immunity Standard
- BS EN 61000-6-4 EMC Generic Emission Standard

Static Battery Charger

- Battery charger is manufactured with switching-mode and SMD technology and ıt has high efficiency.

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- 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, gas 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 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

Aksa Certificates

Directive

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

Standarts

- EN ISO 8528-13:2016 : Reciprocating internal combustion engine-driven alternating current generating sets- Part:13: Safety

- Max load and overload ratings based on ISO 3046 gross flywheel power.
- Technical data based on ISO 3046-1 standards of 77°F(25°C), 14,5Psia (100kPa) and 30% relative humidity.
- Production tolerances in engines and installed components can account for power variations of ± 5%. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations.
- All fuel and thermal calculations unless otherwise noted are done at ISO 3046 rated load using LHV for NG of 48,17 MJ/kg.
- At 0,5 in-H2O of Package Restriction at STP

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-Volume calculated using density of 0,717 kg/m3 for NG and 0,51 kg/L for LPG

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