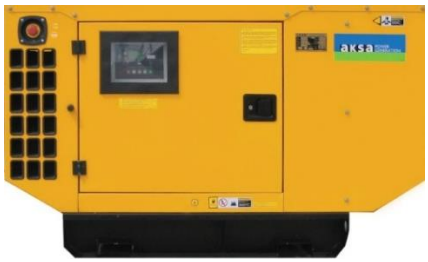
APG 28 LPG



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)

400V 3Phase, 50Hz, PF 0.8

VOLTAGE	STANDBY RATING (ESP)		PRIME RATING (PRP)		Standby Current (A)
	kWe	kVA	kWe	kVA	
400/231	22	27,5	-	-	39,7

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 perod of operation.

General Characteristics

Model Name	APG 28 LPG
Frequency (Hz)	50
Fuel Type	LPG
Engine Made and Model	PSI2.4L
Alternator	Mecc Alte
Control Panel Model	DSE 6120
Canopy	AK 20
Genset Gas Inlet Pressure	300mbar

ENGINE SPECIFICATIONS

Engine	PSI
Engine Model	2,4L
Number of Cylinder	4 Inline
Bore (mm)	86.5
Stroke (mm)	100
Displacement (L)	2,4
Aspiration	Naturally Aspirated
Compression Ratio	9.5:1
Engine Speed (rpm)	1500
Oil Capacity (min) (L)	4,25
Standby Power (kWm / HP) [1,2,3,4] Per ISO 3046	28,6 / 38,4
Prime Power (kWm / HP) [1,2,3,4] Per ISO 3046	-

Max. Operating pressure to EPR, mbar	27
Block Heater QTY	1
Fuel Type	LPG
Injection Type and System	Spark-Ignited
Governor System	ECU
Operating Voltage (Vdc)	12
Cooling Method	Water Cooled
Cooling Fan Air Flow (m3/min) [5]	108
Coolant Capacity (engine only/ engine and radiator) (L)	10,5
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (kg/h / L/h) [3,4,6]	6,5 / 12,8
Fuel Cons. Prime With %75 Load (kg/h / L/h) [3,4,6]	TBD
Fuel Cons. Prime With %50 Load (kg/h / L/h) [3,4,6]	TBD

ALTERNATOR CHARACTERISTICS

Manufacturer	Mecc Alte
Alternator Made and Model	ECP 28 1L/4C
Frequency (Hz)	50
Power (kVA)	25
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)	121,9
Cooling Air (m³/min)	6,6

Canopy Dimensions

Length (mm)	2102
Width (mm)	960
Height (mm)	1500

1 Max load and overload ratings based on ISO 3046 gross flywheel power.
2 Technical data based on ISO 3046-1 standards of 77°F(25°C), 14.5Psia (100kPa) and 30% relative humidity.
3 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.
4 All fuel and thermal calculations unless otherwise noted are done at ISO 3046 rated load using LHV for NG of 48.17 MJ/kg.
5 At 0.5 in-H2O of Package Restriction at STP
6.Volume calculated using density of 0.717 kg/m3 for NG, 0.51 kg/L for LPG

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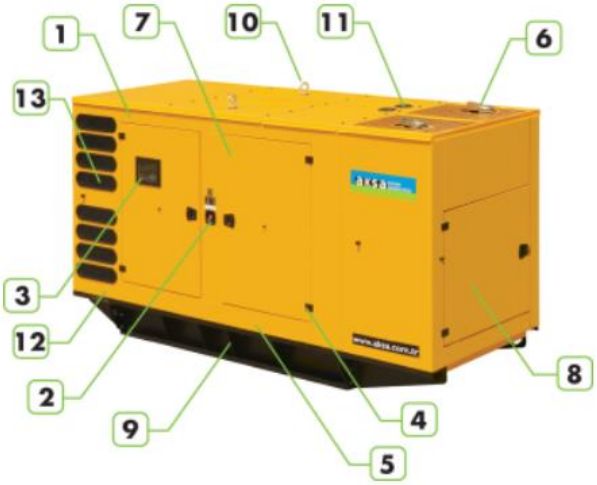

1.Steel structures
2. Emergency stop push button
3. Canopy and panels made from powder coated sheet steel.
4. Control panel is mounted on the baseframe. Located at the right side of the generator set
5. Oil could be drained via valve and a hose
6. Exhaust system in the canopy
7. Special large access doors for easy maintanance
8. In front and back side special large access doors for easy maintanance
9. Base frame
10. Lifting points
11. The cap on the canopy provides easy accsess to radiator cap.
12. Sound proofing materials
13. Plastic air intake pockets.

INTRODUCTION

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.

Control Panel

Control Module	DSE
Control Module Model	DSE 6120
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 6120 Auto Mains Failure control modüle, Battery charger input 198-264 volt, output 27,6 V 5 A (24 V) or 13,8 Volt 5A (12V), 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 on baseframe with steel stand. Located at the right side of the generator set (When you look at the Gen.Set. from Alternator).

GENERATING SET CONTROL UNIT

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 switch over to the generator when the mains power fails.

The DSE 6120 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.

STANDARD SPECIFICATIONS

- Microprocessor controlled.
- LCD display makes information easy to read
- Automatically transfers between mains (utilty) and generator power.
- Manual programming on front panel.
- User-friendly set-up and button layout. communications via RS232, RS485 and ethernet.
- Remote start.
- Event logging (50) showing date and time.
- Controls: Stop/Reset, Manual, Auto, Test, Start, buttons. An additional push button next to the LCD display is used to scroll through the modules' metering display.

Instruments

ENGINE

Engine speed

Oil pressure

Coolant temperature

Run time Battery volts

Configurable timing

GENERATOR

Voltage (L-L, L-N)

Current (L1-L2-L3)

Frequency

Gen.Set ready

Gen.Set enabled

MAINS
Gen.Set ready
Gen.Set enabled
WARNING
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.
SHUT DOWNS
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
ELECTRICAL TRIP
Generator over current

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 m)

Standards

Elecrical 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 efficincy.
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.
Charge fail output is available.
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

APG 28 LPG

STANDARD SPECIFICATIONS

- Heavy duty, water cooled naturalgas 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
- Static battery charger
- Flexible gas connection hoses
- Single bearing, class H alternator
- Industrial exhaust silencer and steel belows supplied separately
- Manual for use and installation

OPTIONAL EQUIPMENTS

ALTERNATOR

Anti-Condensation heater

Over sized alternator

Main line circuit breaker

CONTROL SYSTEM

Remote annunciator panel

Remote alarm panel

Alarm output relays

Erath fault, single set

Charging ammeter

TRANSFER SWITCH

Three Pole Contactor

Four Pole Contactor

VISE ACCESSORIES

Manuel oil drain pump

Electrical oil drain pump

Enclosure: weather protective or sound attenuated

Duct adapter (on radiator)

Inlet and outlet motorised louvers

Tool kit for maintenance

Supplied with oil and coolant- 30 °C

AKSA CERTIFICATES

- CE
- 2000/14/EC