

**AKSA Power Generation** has been producing industrial generator sets with an innovative compact design and excellence in quality for over 30 years. AKSA has been providing reliable power through three main production plants and over 15 branch offices worldwide.



**General Characteristics**

Model Name	<b>APD103MP-6</b>	Frequency / PF	<b>60Hz, 1800 rpm, 1pf</b>
Engine Make & Model	<b>Perkins 1104A-44TG2</b>	Alternator Make	<b>Stamford</b>
Control Panel Model	<b>DSE 6020</b>	Base Frame / Enclosure	<b>AKSA AK40</b>

**Genset Rating – 60Hz, 1800rpm, 1pf, Single phase**

Engine	Alternator	Voltage	Standby Power kVA / kW	Prime Power kVA / kW	Standby Current
1104A-44TG2	UCI224G	220 / 110V	78.1	71	355A

Stand-by Power (Maximum): Power available at variable load in the event of main power network failure. No over load is permitted.  
 Prime Power: Power available at variable load in lieu of a main power network. Overload of 10% is permitted for 1 hour in every 12 hours of operation.  
 The above ratings represent the engine performance capabilities to conditions specified in accordance with ISO 8528/5 & ISO3046.  
**Derating may be required for conditions outside of the test conditions.**

**Codes & Standards**

The Generator set is designed and manufactured in a facility certified to **ISO9001** standards.

The Generator set is designed and manufactured in a facility certified to **ISO14001:2015** standards.

**AKSA Power Generation** provides **single source responsibility** for the generator set & accessories.

The generator set, with its components, are **prototype tested** and **production tested**



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**Engine Data**

Manufacturer	Perkins
Model	1104A-44TG2
Displacement & Cylinders	4.4 L / 4 Cylinders
Engine Speed	1800rpm
Engine Standby Power	90.2 Kw
Engine Prime Power	82 kW
Aspiration	Turbocharged
Compression Ratio	17.25 : 1
Bore / Stroke	105 mm / 127 mm
Break Mean Effective Pressure	1409 kPa
Engine Coolant Flow	170 l/min
Combustion Air Flow	6.5 m <sup>3</sup> /min
Exhaust Gas Flow	15.85 m <sup>3</sup> /min
Exhaust Gas Temperature	560 °C
Overall Thermal Efficiency	39.5 %
Speed Variation at Constant Load	± 0.5 %

**Fuel System**

Type of Injection	Direct Injection
Fuel Injection Pump	Rotary
Nozzle Opening Pressure	29 Mpa
Fuel Lift Pump Flow/hour	120-150 liters/hr

**Fuel Consumption**

Standby Power (110%)	24.4 L/h
Prime Power (100%)	22.3 L/h
Prime Power (75%)	16.9 L/h
Prime Power (50%)	11.9 L/h

**Electric System**

Engine Cranking Motor	12V
Engine Battery Charge System	Negative Ground
Battery Qty, Rating, CCA	1 x 60Ah

**Cooling System**

Radiator Face Area	0.276 m <sup>2</sup>
Fan Number of Plates/Material	7 / Composite
Total System Capacity	13 L
Max Top Tank Temperature	110 °C
Thermostat Range	82 – 93 °C

**Exhaust System**

Maximum Back Pressure	10 kPa
Exhaust Outlet Size	64 mm

**Lubrication System**

Total System Capacity	8 L
Minimum Capacity	5.5 L
Max Oil Temp	125 °C
Oil Pressure – relief valve opens	415 – 470 kPa
Oil Consumption at full load as a % of fuel consumption	0.15 %

**Energy Balance**

Energy in fuel	236 Kw
Energy in power output – gross	93 Kw
Energy to cooling fan	2.8 kW
Energy to coolant and oil	57 kW
Energy to exhaust	71 kW



## Alternator Data

Manufacturer	Stamford
Standards	BS EN 60034
Control System	Self Excited
A.V.R.	AS440
Voltage Regulation	± 1 %
Insulation System	Class H
Protection	IP23
Rated Power Factor	1
Stator Winding	Double Layer Concentric
Winding Pitch	Two Thirds
Winding Leads	4
Telephone Interference	THF < 2 %
Waveform Distortion	No Load < 1.5 %
Maximum Over speed	2250 rev/min

## Controller Data

Manufacturer	DSE
Model	6020
Type	Auto Mains Failure Control

## Controller Features & Benefits

- Microprocessor controlled
- License free PC Software
- IP65 rating offers increased resistance to water ingress
- Front Panel Editing
- Event log
- Back-lit icon LCD display
- LED and LCD alarm indication
- Power save mode
- PC and front panel configuration
- Configurable timers and alarms

## Battery Charger & Electrical System Data

Manufacturer	AKSA
Model	SmartGen BAC06A
Input Voltage	100V ~ 250V AC
Output Voltage / Current	13,8V DC / 6A

- Alternative configuration
- Three phase generator monitoring
- Current monitoring and protection
- Power monitoring (kW, kVA, kVAr)
- Reverse power (kW & kVAr) protection
- Three phase utility monitoring

## Jacket Water Heater Data

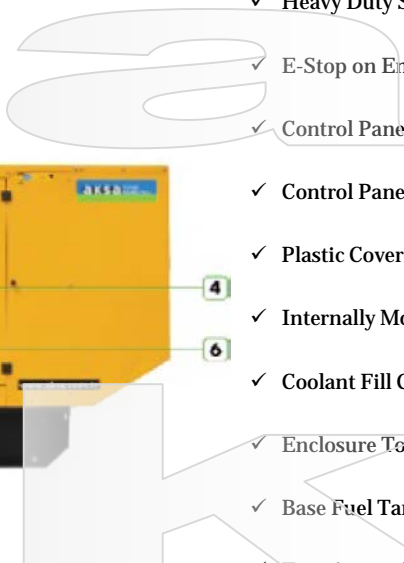
Manufacturer	AKSA
Model	HTR1000W 100-120F
Input Voltage	1 ph, Based on gen voltage
Power	1000W

- Test feature
- Battery voltage monitoring
- Hours counter
- Comprehensive warning or shutdown on fault condition

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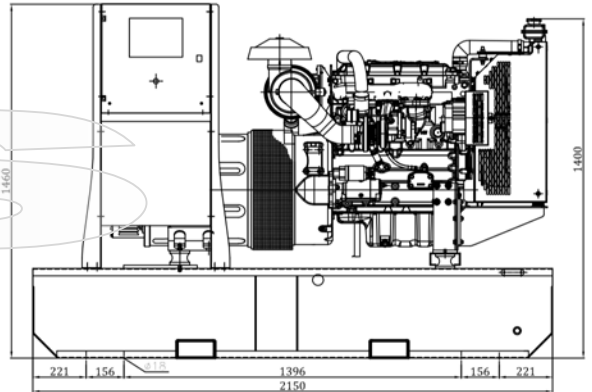
**Enclosure Features**

- ✓ Heavy Duty Steel Structure
- ✓ E-Stop on Enclosure
- ✓ Control Panel Eliminated from Engine Vibrations
- ✓ Control Panel Window
- ✓ Plastic Covered Corrosion Resistant Locks & Hinges
- ✓ Internally Mounted Exhaust System with Rain Cap
- ✓ Coolant Fill Cap
- ✓ Enclosure Top Lifting Hooks
- ✓ Base Fuel Tank
- ✓ Easy Access for Maintenance
- ✓ Sound Absorb High Density Foam



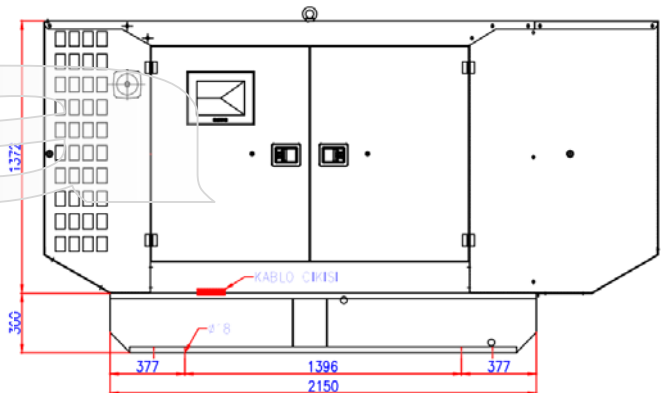
**Open Skid Gen-Set Dimensions**

Length	2150 mm
Width	1050 mm
Height	1460 mm
Dry Weight	1040 kg
Tank Capacity	240 L



**Enclosed Gen-Set Dimensions**

Length	3100 mm
Width	1113 mm
Height	1741 mm
Dry Weight	1380 kg
Tank Capacity	240 L
Sound Pressure @ 7 meters	66 dB(A)



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**Standard Features & Accessories**

- ✓ Heavy Duty Steel Base Frame
- ✓ Integral Fuel Tank, Single Wall
- ✓ Fuel Drain Plug
- ✓ Control Panel Window
- ✓ Engine Jacket Water Heater
- ✓ Battery and Battery Rack
- ✓ Battery Charger
- ✓ Radiator fill cap on enclosure
- ✓ Anti Vibration Pads between Engine/Alternator & Base Frame
- ✓ Residential Grade Silencer Inside Enclosure
- ✓ Industrial Grade Silencer Set for Open Skid Sets
- ✓ Sound Absorb Foam for Enclosure
- ✓ Air Inlet & Outlet Rodent Guards
- ✓ Oil Drain Valve
- ✓ Coolant Drain Valve
- ✓ Flex Fuel Lines
- ✓ Air Filter Restriction Gauge
- ✓ Engine Manifold Cover
- ✓ Turbocharger Cover
- ✓ Protection Covers for Rotating Parts
- ✓ Exhaust Insulation Cover
- ✓ Control Panel Window
- ✓ Operations Manual
- ✓ 24 Months / 2000 hours Limited Standby Warranty

**Optional Accessories**

- Main Line CB (3 / 4 Poles)
- PMG
- Anti-condensation Heater
- Single wall fuel tank – 24hours capacity
- Double wall fuel tank – 24hours capacity
- Fuel Level Display & Alarm on Controller
- Low / High Fuel Alarms
- Fuel Water Separator Filter
- Auto Fuel Fill Control System
- Oil Temperature Display on Controller
- Manual Speed Adjust Rheostat
- Manual Voltage Adjust Rheostat
- Remote Annunciator Panel
- Remote Control & Monitoring Panel
- Advanced SMS Messaging
- Control Panel Heater
- Battery Disconnect Switch
- Battery Heater
- 10A Battery Charger
- Battery Charge Ammeter
- Tool Kit for Maintenance
- Power Plug Outlet Kit
- Automatic Transfer Panel (ATS) – Contactor Design
- Automatic Transfer Panel (ATS) – Changeover Design

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