

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	AP59-6	Frequency / PF	60Hz, 1800 rpm, 0.8pf
Engine Make & Model	Perkins 1103A-33TG1	Alternator Make	Stamford
Control Panel Model	DSE 6020	Base Frame / Enclosure	AKSA AK21

Genset Rating – 60Hz, 1800rpm, 0.8pf

Engine	Alternator	Voltage	Standby Power	Prime Power	Standby Current
1103A-33TG1	PI144K	480 / 277V	59kVA	53kVA	70 A
	UCI224D	380 / 222V	59kVA	53kVA	89 A
	UCI224D	220 / 127V	59kVA	53kVA	154 A
	UCI224D	208 / 120V	59kVA	53kVA	163 A

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**



Engine Data

Manufacturer	Perkins
Model	1103A-33TG1
Displacement & Cylinders	3.3 L / 3 Cylinders
Engine Speed	1800rpm
Engine Standby Power	53.9 Kw
Engine Prime Power	48.8 kW
Aspiration	Turbocharged
Compression Ratio	17.25 : 1
Bore / Stroke	105 mm / 127 mm
Break Mean Effective Pressure	1124 kPa
Engine Coolant Flow	151 l/min
Combustion Air Flow	3.9 m ³ /min
Exhaust Gas Flow	9.5 m ³ /min
Exhaust Gas Temperature	551 °C
Overall Thermal Efficiency	39.1 %
Speed Variation at Constant Load	± 0.75 %

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%)	14.3 L/h
Prime Power (100%)	12.9 L/h
Prime Power (75%)	9.9 L/h
Prime Power (50%)	7.1 L/h

Electric System

Engine Cranking Motor	12V
Engine Battery Charge System	Negative Ground
Battery Qty, Rating, CCA	1 x 54Ah

Cooling System

Radiator Face Area	0.276 m ²
Fan Number of Plates/Material	7 / Composite
Total System Capacity	10.2 L
Max op Tank Temperature	110 °C
Thermostat Range	82 – 93 °C

Exhaust System

Maximum Back Pressure	10 kPa
Exhaust Outlet Size	56 mm

Lubrication System

Total System Capacity	8.3 L
Minimum Capacity	6.2 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	142 kW
Energy in power output – gross	55.6 kW
Energy to cooling fan	1.7 kW
Energy to coolant and oil	34 kW
Energy to exhaust	43 kW

Alternator Data

Manufacturer	Stamford
Standards	BS EN 60034
Control System	Self Excited
A.V.R.	AS480 / SX460
Voltage Regulation	± 1 %
Insulation System	Class H
Protection	IP21 / IP23
Rated Power Factor	0.8
Stator Winding	Double Layer Concentric
Winding Pitch	Two Thirds
Winding Leads	12
Telephone Interference	THF < 2 %
Waveform Distortion	No Load < 1,5 %
Maximum Over speed	2250 rev/min

Battery Charger & Electrical System Data

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

Jacket Water Heater Data

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

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

Alternative configuration

Three phase generator monitoring
 Current monitoring and protection
 Power monitoring (kW, kVA, kVAr)

Reverse power (kW & kVAr) protection
Three phase utility monitoring
Test feature
Battery voltage monitoring
Hours counter
Comprehensive warning or shutdown on fault condition

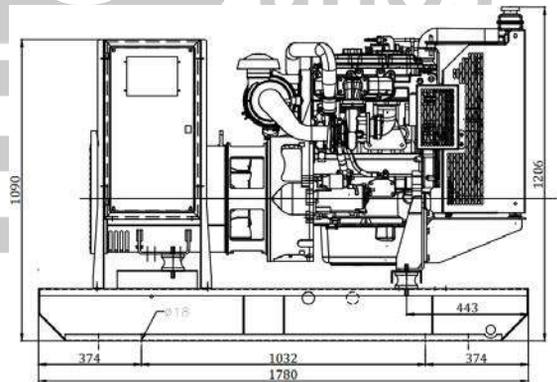
Enclosure Features

- ✓ 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



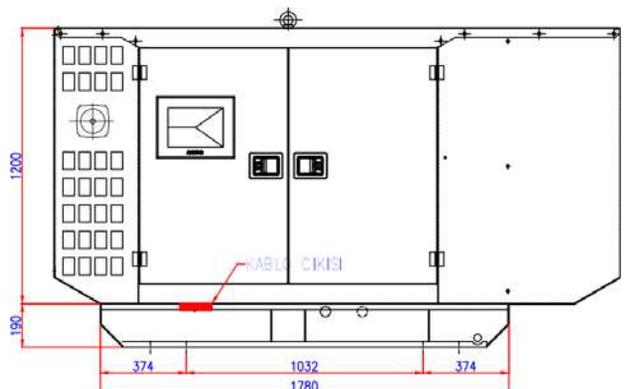
Open Skid Gen-Set Dimensions

Length	1780 mm
Width	950 mm
Height	1206 mm
Dry Weight	850 kg
Tank Capacity	100 L



Enclosed Gen-Set Dimensions

Length	2466 mm
Width	1010 mm
Height	1461 mm
Dry Weight	1030 kg
Tank Capacity	100 L
Sound Pressure @ 7 meters	70 dB(A)



*Manufacturer reserves the right to make changes in model, technical specifications, color, equipment and accessories without prior notice.

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)
- EBS / PMG
- Anti-condensation Heater
- Single wall fuel tank – 24hours capacity
- Double wall fuel tank
- 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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