

**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>APD1860M-6</b>	Frequency / PF	<b>60Hz, 1800 rpm, 0.8pf</b>
Engine Make & Model	<b>Mitsubishi S12R-PTAA2</b>	Alternator Make	<b>Stamford</b>
Control Panel Model	<b>DSE 7320</b>	Base Frame / Enclosure	<b>AK99/ISO CONTAINER</b>

**Genset Rating – 60Hz, 1800rpm, 0.8pf**

Engine	Alternator	Voltage	Standby Power	Prime Power	Standby Current
S12R-PTAA2	PI734C (Wnd-312)	480 / 277V	1860kVA	1690kVA	2237A
	PI734C (Wnd-13)	380 / 222V	1860kVA	1690kVA	2826A
	N.A.	220 / 127V	-	-	-
	N.A.	208 / 120V	-	-	-

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	Mitsubishi
Model	S12R-PTAA2
Displacement & Cylinders	49.03 L / 12 Cylinders
Engine Speed	1800rpm
Engine Standby Power wo/Fan	1633 Kw
Engine Prime Power wo/Fan	1484 kW
Aspiration	Turbo-charged, Air to Air Cooler
Compression Ratio	13.5 : 1
Bore / Stroke	170 mm / 180 mm
Break Mean Effective Pressure	321 psi
Mean Piston Speed	10.8 m/s
Allowable Fan Loss Power	50 Kw
Max Regenerative Power Absorption Capacity wo Fan	144 Kw
Steady State Speed Stability	±0.25 %
Max Over Speed Capacity	2100 rpm
Wet Weight – Engine Only	5276 kg

## Electric System

Battery Charge Alternator	24V / 30Ah
Starting Motor Capacity	7.5 kW x 2
Battery Qty, Rating	4 x 200Ah

## Cooling System

Radiator Cooling System Type	Closed Circuit
Radiator Ambient Temp	> 50 °C
Coolant Capacity, Engine Only (Jacket & Air-Cooler)	327 l
Max Coolant Temp at Engine Outlet	98 °C
Thermostat, Start -- Fully Open	71– 85 °C

## Exhaust System

Heat Rejection to Exhaust	78731 BTU/min
Max Allowable Back Pressure	600 mmH2O
Exhaust Gas Flow	391 m <sup>3</sup> /min

## Fuel System

Fuel Injector	Mitsubishi PS6 Type x 2
Max Suction of Feed Pump	75 mmHg
Max Static Head of Return & Leak Pipe	150 mmHg

## Air Intake System

Intake Air Flow	148 m <sup>3</sup> /min
Max Intake Air Restriction (Clean Element)	400 mmH2O
Air Filter Type	Dry Paper Element

## Fuel Consumption

Standby Power (110%)	386 l/h
Prime Power (100%)	351 l/h
Prime Power (75%)	273 l/h
Prime Power (50%)	175 l/h
Prime Power (25%)	88 l/h

## Lubrication System

Total System Capacity	180 l
Sump Capacity Max / Min	150 l / 108 l
Max Oil Temp	110 °C
Oil Pressure at Rated Speed	71 – 93 psi

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**Alternator Data**

Manufacturer	Stamford
Standards	BS EN 60034
Control System	PMG
A.V.R.	MX321
Voltage Regulation	± 0.5 %
Insulation System	Class H
Protection	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

**Controller Data**

Manufacturer	DSE
Model	7320
Type	Auto Mains Failure Control

**Controller Features & Benefits**

- Microprocessor controlled
- License free PC Software
- IP65 rating offers increased resistance to water ingress
- Modules can be integrated to building management systems
- Real time clock provides accurate event log
- Four line back-lit LCD text display
- Five key menu navigation
- Front panel editing with PIN protection
- Support up to three remote display modules
- Configurable timers and alarms
- Multiple date and timer scheduler

**Battery Charger & Electrical System Data**

Manufacturer	AKSA
Model	SmartGen BAC06A
Input Voltage	100V ~ 250V AC
Output Voltage / Current	27,6V DC / 3A

- Integral PLC editor
- 'Protections disabled' feature
- kW & kVAr protection
- Reverse power (kW & kVAr) protection
- Power monitoring (kWh, kVAr, kVAh, kVArh)

**Jacket Water Heater Data**

Manufacturer	AKSA
Model	HTR4000
Input Voltage	Based on Genset Voltage
Power	2 x 4000W

- Load switching (load shedding and dummy load outputs)
- Unbalanced load protection
- Independent Earth Fault trip
- Fully configurable via DSE Configuration Suite PC Software
- SCADA monitoring via DSE Configuration Suite PC Software

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**Enclosure Features**

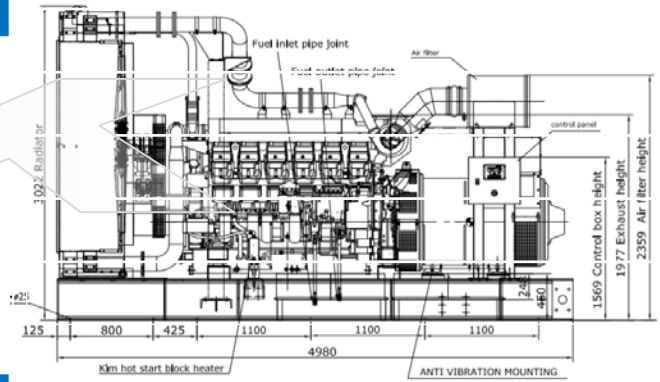
- ✓ Heavy Duty Steel Structure
- ✓ E-Stop on Enclosure
- ✓ Control Panel Eliminated from Engine Vibrations
- ✓ Control Panel Window
- ✓ Plastic Covered Corrosion Resistant Locks & Hinges

**Enclosure Features**

- ✓ Externally Mounted Exhaust System with Rain Cap
- ✓ Coolant Fill Cap
- ✓ Top Lifting Feature
- ✓ Standalone Fuel Tank
- ✓ Easy Access for Maintenance

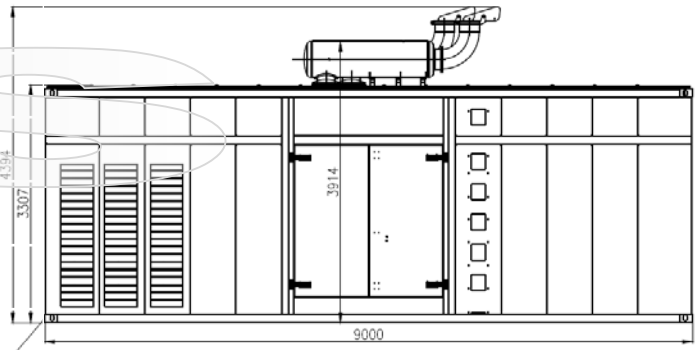
**Open Skid Gen-Set Dimensions**

Length	5125 mm
Width	2445 mm
Height	3025 mm
Dry Weight	11100 kg
Tank Capacity	-



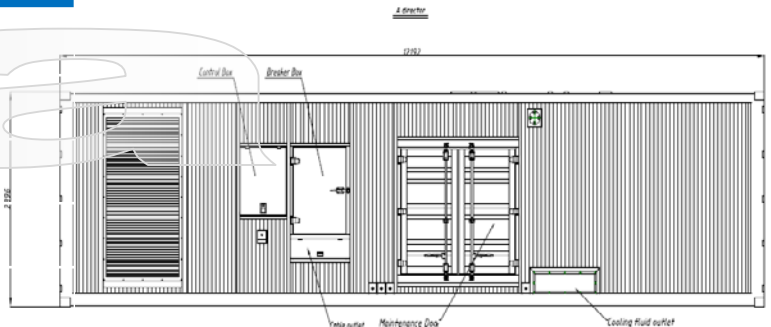
**Enclosed Gen-Set Dimensions – AK99 CANOPY**

Length	9000 mm
Width	2800 mm
Height	4394 mm
Dry Weight	15450 l
Tank Capacity	2000 L
Sound Pressure @ 7 meters	N.A.



**Enclosed Gen-Set Dimensions – ISO CONTAINER**

Length	12192 mm
Width	2438 mm
Height	2896 mm
Dry Weight	21500 kg
Tank Capacity	-
Sound Pressure @ 7 meters	82 dB(A)



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**Standard Features & Accessories**

- ✓ Heavy Duty Steel Base Frame
- ✓ Integral Fuel Tank
- ✓ PMG w/MX321 AVR
- ✓ Engine Jacket Water Heater
- ✓ Battery and Battery Rack
- ✓ Battery Charger
- ✓ Battery Restraint
- ✓ 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)
- Anti-condensation Heater
- Stand Alone Bulk 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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