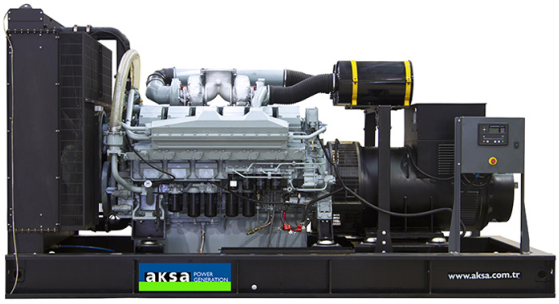
APD 1650 M



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)

3 Phase,50 Hz, PF 0.8

Voltage	STANDBY RATING (ESP)		PRIME RATING (PRP)		Standby Amper
	kW	kVA	kW	kVA	
400/231	1320,00	1650,00	1200,00	1500,00	2381,64

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	APD 1650 M
Frequency (Hz)	50
Fuel Type	Diesel
Engine Made and Model	MITSUBISHI S12R-PTAA2
Alternator Made and Model	ECO 46-1S/4 A
Control Panel Model	DSE 7320
Canopy	AK 99 - External Removable Silencer

ENGINE SPECIFICATIONS

Engine	MITSUBISHI
Engine Model	S12R-PTAA2
Number of Cylinder (L)	12 cylinders - V type
Bore (mm.)	170
Stroke (mm.)	180
Displacement (lt.)	49.03
Aspiration	Turbo Charged and AfterCooled
Compression Ratio	13.5:1
RPM (d/dk)	1500

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Oil Capacity (Total With Filter) (lt)	180
Standby Power (kW/HP)	1441/1932
Prime Power	1314/1761
Block Heater QTY	2
Block Heater Power (Watt)	3000
Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Mitsubishi PS6x2 (In-Line)
Governor System	Electronic
Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	4x143
Charge Alternator (A)	30
Cooling Method	Water Cooled
Cooling Fan Air Flow (m3/min)	1800
Coolant Capacity (engine only / with radiator) (lt)	33/317
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (lt/hr)	308
Fuel Cons. Prime With %75 Load (lt/hr)	234.2
Fuel Cons. Prime With %50 Load (lt/hr)	163.3

ALTERNATOR CHARACTERISTICS

Manufacturer	Mecc Alte
Alternator Made and Model	ECO 46-1S/4 A
Frequency (Hz)	50
Power (kVA)	1500
Voltage (V)	400
Phase	3
A.V.R.	DER1
Voltage Regulation	(+/-)0.5%
Insulation System	H
Protection	IP23
Rated Power Factor	0.8
WEIGHT COMP. GENERATOR (Kg)	3010
COOLING AIR (m^3/min)	135

Open Gen.Set Dimensions (mm)

LENGTH	4970
WIDTH	2212
HEIGHT	3022
DRY WEIGHT (kg.)	11400
TANK CAPACITY (lt.)	2000

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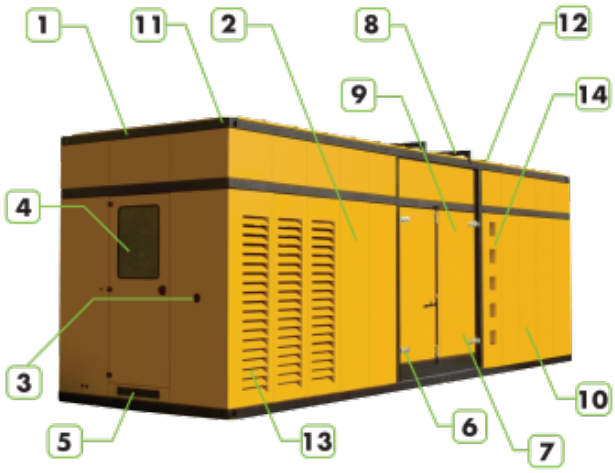
Gen.Set Canopy Dimensions (mm)

LENGTH	9000
WIDTH	2800
HEIGHT	3307
DRY WEIGHT (kg.)	15450
TANK CAPACITY (lt.)	2200



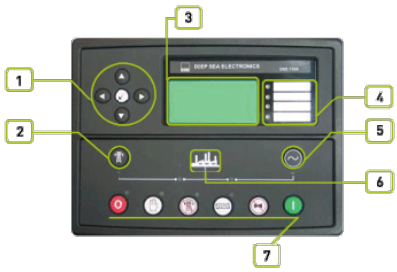
1. Steel structure made from steel sheet and steel profiles.
2. Canopy and panels made from powder coated sheet steel.
3. Emergency stop push button.
4. Control panel is mounted on the baseframe located at the back of the Generator set.
5. Cables out locations are back of the canopy.
6. Corrosion.resistant locks and hinges.
7. Oil could be drained via valve and a hose.
8. Exhaust system on the canopy.
9. Special large access doors for easy maintanance.
10. The cap on the canopy provides easy accsess to radiator cap.
11. Lifting points similar to ISO container, located on each top corner of the Canopy.
12. Sound proofing materials.
13. Fuel tank is at front of the canopy ,easy access to the fuel tank via lockable door.
14. Integrated ladder built in toside of the canopy allows access to the top of the canopy.

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 7320
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 7320 Auto Mains Failure control module Static battery charger Emergency stop push button and fuses for control circuits

CONSTRUCTION and FINISH

Comonents installed in sheet steel enclosure.

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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 generating set baseframe on robust steel stand or power module. Located at side of generating set with properly panel visibility.

GENERATING SET CONTROL UNIT

The DSE 7320 conrol module is a standard addition to our generator sets from 220 kVA upwards and it has been designed to start and stop diesel andgas generating sets that include electronic and non electronic engines.

The DSE 7320 includes the additional capability of being able to monitor a mains (utility) supply and is therefore suitable for controlling a standby generating set in conjunction with an automatic transfer switch.

The DSE7320 also indicates operational status and fault conditions, automatically shutting down the generating set and indicating faults by means of its LCD display on the front panel.

STANDARD SPECIFICATIONS

Microprocessor controlled

- 132 x 64 pixel LCD display makes information easy to read

- Front panel programming and also via PC software

- Soft touch membrane keypad and five key menu navigation

- Remote communications via RS232, RS485 and ethernet.

- Event logging (50) showing date and time

- Multiple date and time engine exercise mode and maintenance scheduler

- Engine block heater control.

- Controls; stop, manuel, auto, test, start, mute lamb test/transfer to generator, transfer to mains, menu navigation.

Instruments

ENGINE

Engine speed

Oil pressure

Coolant temperature

Run time Battery volts

Engine maintenance due

GENERATOR

Voltage (L-L, L-N)

Current (L1-L2-L3)

Frequency

Earth current

kW

Pf

kVAr

kWh, kVAh, kVArh

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Phase sequence
MAINS
Voltage (L-L, L-N)
Frequency
WARNING
Charge failure
Battery under voltage
Fail to stop
Low fuel level (opt.)
kW over load
Negative phase sequence
Loss of speed signal
PRE-ALARMS
Low oil pressure
High engine temperature
Low engine temperature
Over /Under speed
Under/over generator frequency
Under/over generator voltage
ECU warning
SHUT DOWNS
Fail to start
Emergency stop
Low oil pressure
High engine temperature
Low coolant level
Over /Under speed
Under/over generator frequency
Under/over generator voltage
Oil pressure sensor open
Phase rotation
ELECTRICAL TRIP
Earth fault
kW over load
Generator over current
Negative phase sequence

Options

High oil temperature shut down

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Low fuel level shut down

Low fuel level alarm

High fuel level alarm

EXPANSION MODULES

Editional LED module (2548)

Expension relay module (2157)

Expansion input module (2130)

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

2405 has fully output shot circuit protection and ıt can be used as a current source.

2405 charger has high efficiency, long life, low failure rate, light weight and low heat radiated in accordance with linear alternatives.

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.

Input: 196-264V.

Output: 27,6V 5A or 13,8V 5A.

STANDARD SPECIFICATIONS

- Water cooled diesel 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
- Steel base frame and anti-vibration isolators
- Spare external fuel tank (open set)
- Flexible fuel connection hoses
- Single bearing, class H alternator
- Industrial exhaust silencer and steel bellows supplied separately
- Static battery charger
- Manual for application and installation
- Generators Sets’ voltage and frequency regulation comply with ISO 8528-5
- Generators Sets’ can take 100% load at one step according to NFPA110

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OPTIONAL EQUIPMENTS

ENGINE
Fuel-Water Seperator Filter
Oil heater
ALTERNATOR
Anti-Condensation Heater
Main line circuit breaker
CONTROL SYSTEM
Automatic synchronising and power control system (multi gen-set Parallel)
Paralel system with mains.
Transition synchronization with mains
Remote relay output
Alarm output relays
Remote communication with modem
Earth fault, single set
Charge Ammeter
TRANSFER SWITCH
Three or four pole contactor
Three or four pole motor operated circuit breaker
OTHER ACCESSORIES
Main Fuel Tank
Automatic or manual fuel filling system
Manual oil drain pump
Low and high fuel level alarm
Residential silencer
Enclosure: weater protective or sound attenuated
Duct adapter (on radiator)
Inlet and outlet motorised louvers
Inlet and outlet acoustic baffles
Tool kit for maintenance
1500/3000 hours maintenance kit
Supplied with oil and coolant - 30 °C

AKSA CERTIFICATES

- TS ISO 8528
- TS ISO 9001-2008
- CE
- SZUTEST
- 2000/14/EC

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