### APD16A

DIESEL GENERATING SET 400/230 V - 50 Hz

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Power Pf. 0.8</th>
<th>APD16A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby</td>
<td>kVA</td>
<td>15.5</td>
</tr>
<tr>
<td></td>
<td>kW</td>
<td>12.4</td>
</tr>
<tr>
<td>Prime</td>
<td>kVA</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td>kW</td>
<td>11.6</td>
</tr>
</tbody>
</table>

Standby: Continuous running at variable load for duration of an emergency. No overload is permitted on these ratings. In accordance with ISO 3046.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period. In accordance with ISO 8528, ISO 3046.

- High quality, reliable and complete power unit
- Compact design
- Easy start and maintenance possibility
- Every generating set is subject to a comprehensive test program which includes full load testing, checking and provision of all control and safety shut down functions testing
- Fully engineered with a wide range of options and accessories: Canopy, sound proof canopy and on-road trailer

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

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### ENGINE

<table>
<thead>
<tr>
<th>Model</th>
<th>A4CRX18</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engine Power Output</strong> at rated rpm</td>
<td>kWm 16.7, HP 22.39</td>
</tr>
<tr>
<td><strong>Aspiration and Cooling</strong></td>
<td>Natural</td>
</tr>
<tr>
<td>Total Displacement</td>
<td>Litre 1.808</td>
</tr>
<tr>
<td>No. of Cylinders and Build</td>
<td>4 - Inline</td>
</tr>
<tr>
<td>Engine Speed</td>
<td>rpm 1500</td>
</tr>
<tr>
<td>Bore and Stroke</td>
<td>mmxmm 80x90</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>18.1</td>
</tr>
<tr>
<td>Governor</td>
<td>Mechanical</td>
</tr>
<tr>
<td>Fuel Consumption at full load</td>
<td>L/hr 4.1</td>
</tr>
<tr>
<td><strong>Fuel Tank Capacity</strong></td>
<td>Litre Open: 32/Canopy: 32</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>Litre 6.5</td>
</tr>
<tr>
<td>Coolant Capacity</td>
<td>Litre 18.5</td>
</tr>
<tr>
<td>Radiator Cooling Air</td>
<td>m³/min 210</td>
</tr>
<tr>
<td>Air Intake – Engine</td>
<td>m³/min 1.26</td>
</tr>
<tr>
<td>Exhaust Gas Flow</td>
<td>m³/min 5.8</td>
</tr>
</tbody>
</table>

- Heavy duty Aksa diesel engine
- Four stroke, water cooled, Natural
- Direct injection fuel system
- Mechanical Governor system
- 12/24 V D.C. starter and charge alternator
- Replaceable fuel filter, oil filter and dry element air filter
- Cooling radiator and fan
- Starter battery (with lead acid) including Rack and Cables
- Flexible fuel connection hoses and manual oil sump drain valve
- Industrial capacity exhaust silencer and steel bellows
- Jacket water heater (at automatic models)
- Operation manuals and circuit diagram documents

### ALTERNATOR

<table>
<thead>
<tr>
<th>Design</th>
<th>Brushless single bearing, revolving field</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stator</strong></td>
<td>2/3 pitch</td>
</tr>
<tr>
<td><strong>Rotor</strong></td>
<td>Single bearing, flexible disc</td>
</tr>
<tr>
<td><strong>Insulation System</strong></td>
<td>Class H</td>
</tr>
<tr>
<td><strong>Standard Temperature Rise</strong></td>
<td>125 - 163°C Continuous</td>
</tr>
<tr>
<td><strong>Exciter Type</strong></td>
<td>Self Excited</td>
</tr>
<tr>
<td><strong>Phase Rotation</strong></td>
<td>A (U), B (V), C (W)</td>
</tr>
<tr>
<td><strong>Alternator Cooling</strong></td>
<td>Direct drive centrifugal blower fan</td>
</tr>
<tr>
<td><strong>AC Waveform Total Harmonic Distortion</strong></td>
<td>No load &lt; 1.5%. Non distorting balanced linear load &lt; 5%</td>
</tr>
<tr>
<td><strong>Telephone Influence Factor (TIF)</strong></td>
<td>&lt;50 per NEMA MG1-22.43</td>
</tr>
<tr>
<td><strong>Telephone Harmonic Factor (THF)</strong></td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

- Brushless, single bearing system, flexible disc, 4 poles
- Insulation class H
- Standard degree of protection IP21 (IP22/IP23 is available.)
- Self-exciting and self-regulating
- Impregnation with tropicalised epoxy varnish
- Solid state Automatic Voltage Regulator
- Stator winding with 2/3 pitch for improved harmonics
CONTROL SYSTEM

Control supervision and protection panel is mounted on the genset base frame. The control panel is equipped as follows:

1. Auto Mains Failure Control Panel
   Panel equipments:
   ✓ Control with AMF module
   ✓ Static battery charger
   ✓ Emergency stop push button

✓ Generator Cos (σ)

a) Generating set control module DSE 6020 features:
✓ The module is used to monitor main supply and starts and stops of a standby generating set
✓ Micro-processor based design
✓ Automatic control of main and generator contactors
✓ Monitors engine performance and AC power output LED alarm indication
✓ Front panel configuration of timers and alarm trip points
✓ CAN and magnetic pick-up versions(specify on ordering)
✓ 4 digital inputs/3 analogue inputs
✓ 6 outputs(4 configurable on Magnetic Pick-up, 6 configurable on CANbus version)
✓ Easy push button control
   STOP/RESET - MANUAL - AUTO - TEST – START

b) Metering via LED display:
✓ Generator Volts (L-L / L-N) Generator kVA
✓ Engine oil pressure (PSI-Bar) Generator kW
✓ Generator Ampere (L1,L2,L3) Generator Cos (σ)
✓ Engine temperature (°C &°F)
✓ Generator Frequency (Hz)
✓ Plant battery volts
✓ Engine hours run
✓ Mains Volts (Ph-Ph/Ph-N)

c) Alarms:
✓ Over and Under Speed
✓ Low and High Battery Volt.
✓ Start and Stop Failure
✓ Charge fail
✓ Over Current
✓ Under / Over Generator Voltage
✓ Low Oil Pressure
✓ Emergency stop
✓ High engine temperature

d) LED Indications
✓ Mains available
✓ Generator available
✓ Mains on load
✓ Generator on load

OPTIONAL EQUIPMENTS

Diesel Engine
✓ Oil heater

Alternator
✓ 3/4 Pole Output Circuit Breaker
✓ Anti-condensation Heater

Panel
✓ Charge ammeter
✓ Transfer Switch 3Pole
✓ Transfer Switch 4 Pole
✓ Earth Fault,single set

Accessories
✓ Bulk fuel tank
✓ Automatic filling system
✓ Fuel-water separator filter
✓ Low fuel level alarm
✓ Residential silencer
✓ Enclosure or sound proof canopy
✓ Trailer
✓ Manual oil drain pump
✓ Tool kit for maintenance

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The complete gen-set is mounted as whole on a heavy-duty fabricated, steel base frame.
- Anti-vibration pads are fixed between the engine/alternator feet and the base frame.
- Base frame design incorporates an integral fuel tank (Up to 750 kVA).
- The generating set can be lifted or carefully pushed/pulled by the base frame.
- Dial type fuel gauge and drain plug on the fuel tank.
- Forklift pockets within base frame (up to 500kVA).

### DIMENSIONS

#### OPEN TYPE

<table>
<thead>
<tr>
<th>DIMENSIONS (LxWxH)</th>
<th>mm</th>
<th>1400x760x927</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRY WEIGHT</td>
<td>kg</td>
<td>390</td>
</tr>
</tbody>
</table>

#### SOUND ATTENUATED TYPE

<table>
<thead>
<tr>
<th>DIMENSIONS (LxWxH)</th>
<th>mm</th>
<th>1672x823x1127</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRY WEIGHT</td>
<td>kg</td>
<td>520</td>
</tr>
</tbody>
</table>

### CANOPY

- All canopy parts are designed with modular principles.
- Without welding assembly.
- Doors on each side.
- All metal canopy parts are painted by electrostatic polyester powder paint.
- Exhaust silencer is protected against environment influences.
- Thermally insulated engine exhaust system.
- Emergency stop push button is installed outside of the canopy.
- Easy lifting and moving.
- Easy maintenance and operation.