APD-EPAP100

DIESEL GENERATING SET 480/277 V, 208/120V - 60 Hz

<table>
<thead>
<tr>
<th>MODEL</th>
<th>APD-EPAP100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>Standby kVA</td>
<td>125</td>
</tr>
<tr>
<td>Prime kVA</td>
<td>112.5</td>
</tr>
<tr>
<td>Prime kW</td>
<td>90</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 and checking and providing of all control and safety shut down functions testing
- Full engineered with a wide range of options and accessories: Canopy, sound proof canopy and on road trailer

ENGINE

- Heavy duty Perkins diesel engine
- Four stroke, water cooled, turbocharged
- Direct injection fuel system
- ECM governor system
- 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

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

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>PERKINS 1104D-E44TAG2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPA Certification</strong></td>
<td>TIER 3</td>
</tr>
<tr>
<td><strong>Engine Power Output</strong></td>
<td>BHP kWm HP</td>
</tr>
<tr>
<td><strong>Aspiration and Cooling</strong></td>
<td>Turbo charged</td>
</tr>
<tr>
<td><strong>Total Displacement</strong></td>
<td>Cu.in. Litre</td>
</tr>
<tr>
<td><strong>No. of Cylinders and Build</strong></td>
<td>4-Inline</td>
</tr>
<tr>
<td><strong>Engine Speed</strong></td>
<td>rpm</td>
</tr>
<tr>
<td><strong>Bore and Stroke</strong></td>
<td>inches mmxmm</td>
</tr>
<tr>
<td><strong>Compression Ratio</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Governor</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Starter Motor Voltage</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fuel Consumption @ 100 % load</strong></td>
<td>gal/hr</td>
</tr>
<tr>
<td><strong>Fuel Consumption @ 75% load</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fuel Consumption @ 50% load</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fuel Consumption @ 25% load</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fuel Tank Capacity</strong></td>
<td>gal. Litre</td>
</tr>
<tr>
<td><strong>Oil Capacity</strong></td>
<td>gal. Litre</td>
</tr>
<tr>
<td><strong>Coolant Capacity</strong></td>
<td>gal. Litre</td>
</tr>
<tr>
<td><strong>Radiator Cooling Air</strong></td>
<td>cfm m³/min</td>
</tr>
<tr>
<td><strong>Air Intake – Engine</strong></td>
<td>cfm m³/min</td>
</tr>
<tr>
<td><strong>Exhaust Gas Flow</strong></td>
<td>cfm m³/min</td>
</tr>
<tr>
<td><strong>Standard operating temp degree of radiator</strong></td>
<td>°C</td>
</tr>
<tr>
<td><strong>Sound Level @1 meter / @ 7 meter</strong></td>
<td>dB</td>
</tr>
</tbody>
</table>

### ALTERNATOR

<table>
<thead>
<tr>
<th>Model</th>
<th>Marathon-GM-8.6-4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size(mm)</strong></td>
<td>365x292x375</td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td>Brushless single bearing, revolving field</td>
</tr>
<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 °C Prime / 150 °C Stand by</td>
</tr>
<tr>
<td><strong>Exciter Type</strong></td>
<td>Self Excited(PMG excitation is optional)</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>
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

   a) Generating set control module DSE 7320 features:
   ✓ The module is used to monitor a mains supply and starts and stops a standby generating set
   ✓ Micro-processor based design
   ✓ Automatic control of mains and generator contactors
   ✓ Monitors engine performance and AC power output
   ✓ LED alarm indication
   ✓ Front panel configuration of timers and alarm trip points
   ✓ Easy push button control
   STOP/RESET - MANUAL – TEST- AUTO – MUTE ALARM – START

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

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
   ✓ kW overload
   ✓ Unbalanced load
   ✓ Independent earth fault trip

d) LED Indications
   Four configurable LED’s like:
   ✓ Mains available
   ✓ Generator available
   ✓ Mains on load
   ✓ Generator on load

2. Power Outlet Terminal Board Mounted on the Gen-set Base frame

OPTIONAL EQUIPMENTS

Diesel Engine
✓ Oil heater

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

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

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

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**CHASSIS**

- 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) NON-UL
- 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 500 kVA)

**DIMENSIONS**

<table>
<thead>
<tr>
<th>OPEN TYPE</th>
<th>SOUND ATTENUATED TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIMENSIONS (LxWxH)</strong></td>
<td>inches</td>
</tr>
<tr>
<td><strong>DRY WEIGHT</strong></td>
<td>Lb.</td>
</tr>
<tr>
<td><strong>DIMENSIONS (LxWxH)</strong></td>
<td>inches</td>
</tr>
<tr>
<td><strong>DRY WEIGHT</strong></td>
<td>Lb.</td>
</tr>
</tbody>
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**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