APD500C

DIESEL GENERATING SET  400/230 V - 50 Hz - 3 Phase

<table>
<thead>
<tr>
<th>Power Pf. 0.8</th>
<th>Standby</th>
<th>Prime</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kVA</td>
<td>kW</td>
</tr>
<tr>
<td>Standby</td>
<td>500</td>
<td>400</td>
</tr>
<tr>
<td>Prime</td>
<td>455</td>
<td>364</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

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## ENGINE

<table>
<thead>
<tr>
<th>CUMMINS</th>
<th>KTA19G3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Engine Power Output</strong></td>
<td>kWm 448</td>
</tr>
<tr>
<td><strong>at rated rpm</strong></td>
<td>HP 600</td>
</tr>
<tr>
<td><strong>Aspiration and Cooling</strong></td>
<td>Turbocharged &amp; Aftercooled</td>
</tr>
<tr>
<td><strong>Total Displacement</strong></td>
<td>Litre 18.9</td>
</tr>
<tr>
<td><strong>No. of Cylinders and Build</strong></td>
<td>6 - Inline</td>
</tr>
<tr>
<td><strong>Engine Speed</strong></td>
<td>rpm 1500</td>
</tr>
<tr>
<td><strong>Bore and Stroke</strong></td>
<td>mmxmm 159x159</td>
</tr>
<tr>
<td><strong>Compression Ratio</strong></td>
<td>13.9:1</td>
</tr>
<tr>
<td><strong>Governor</strong></td>
<td>Electronic</td>
</tr>
<tr>
<td><strong>Fuel Consumption at full load</strong></td>
<td>L/hr 97</td>
</tr>
<tr>
<td><strong>Fuel Tank Capacity</strong></td>
<td>Litre Open: 600/Canopy: 893</td>
</tr>
<tr>
<td><strong>Oil Capacity</strong></td>
<td>Litre 50</td>
</tr>
<tr>
<td><strong>Coolant Capacity</strong></td>
<td>Litre 99</td>
</tr>
<tr>
<td><strong>Radiator Cooling Air</strong></td>
<td>m³/min 1057.9</td>
</tr>
<tr>
<td><strong>Air Intake – Engine</strong></td>
<td>m³/min 31.98</td>
</tr>
<tr>
<td><strong>Exhaust Gas Flow</strong></td>
<td>m³/min 89.34</td>
</tr>
</tbody>
</table>

- Heavy duty Cummins diesel engine
- Four stroke, water cooled, turbocharged & aftercooled
- Direct injection fuel system
- Electronic 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>Stator</td>
<td>2/3 pitch</td>
</tr>
<tr>
<td>Rotor</td>
<td>Single bearing, flexible disc</td>
</tr>
<tr>
<td>Insulation System</td>
<td>Class H</td>
</tr>
<tr>
<td>Standard Temperature Rise</td>
<td>125 - 163°C Continuous</td>
</tr>
<tr>
<td>Exciter Type</td>
<td>Self Excited</td>
</tr>
<tr>
<td>Phase Rotation</td>
<td>A (U), B (V), C (W)</td>
</tr>
<tr>
<td>Alternator Cooling</td>
<td>Direct drive centrifugal blower fan</td>
</tr>
<tr>
<td>AC Waveform Total Harmonic Distortion</td>
<td>No load &lt; 1.5%. Non distorting balanced linear load &lt; 5%</td>
</tr>
<tr>
<td>Telephone Influence Factor (TIF)</td>
<td>&lt;50 per NEMA MG1-22.43</td>
</tr>
<tr>
<td>Telephone Harmonic Factor (THF)</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

   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 Genset 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
✓ Fuel-water separator filter
✓ Low fuel level alarm
✓ Residential silencer
✓ Enclosure or sound proof canopy
✓ Trailer
✓ Manual oil drain pump
✓ Tool kit for maintenance
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)
- 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

<table>
<thead>
<tr>
<th>CHASSIS TYPE</th>
<th>DIMENSIONS (LxWxH)</th>
<th>DRY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPEN TYPE</td>
<td>3400x1680x2055</td>
<td>4050 kg</td>
</tr>
<tr>
<td>SOUND ATTENUATED TYPE</td>
<td>5022x1652x2475</td>
<td>5345 kg</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