INTRODUCTION

Aksa is committed to providing the most effective solution to the Data Center industry with the power it takes from engineering, production, distribution, and customer-oriented experience and knowledge. We are constantly improving designs, products and infrastructure to offer the highest level of reliability for Emergency Power Systems. While serving the industry in hundreds of countries Globally, we design our products and systems in line with the needs of Data Center practitioners at the center of our focus. Aksa generator group provides continuity, reliability and ideal performance for Data Centers. For all generator groups produced, preliminary product testing and factory manufacturing testing are performed according to the Uptime Institute's Tier Standards.

Power (kVA) 3 Phase, 50 Hz, PF 0.8

<table>
<thead>
<tr>
<th>VOLTAGE</th>
<th>STANDBY RATING (ESP) kW</th>
<th>kVA</th>
<th>DCP Rating kW</th>
<th>kVA</th>
<th>Standby Amper</th>
</tr>
</thead>
<tbody>
<tr>
<td>400/231</td>
<td>2000,00</td>
<td>2500,00</td>
<td>1800,00</td>
<td>2250,00</td>
<td>3608.55</td>
</tr>
</tbody>
</table>

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 period of operation.

Data Center Continuous (DCC) The maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility.

General Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Name</td>
<td>AP2250</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>50</td>
</tr>
<tr>
<td>Fuel Type</td>
<td>Diesel</td>
</tr>
<tr>
<td>Engine Made and Model</td>
<td>PERKINS 4016-61TRG3</td>
</tr>
<tr>
<td>Alternator Made and Model</td>
<td>PI734H</td>
</tr>
<tr>
<td>Control Panel Model</td>
<td>IntelliGen NT</td>
</tr>
<tr>
<td>Canopy</td>
<td>AK 99</td>
</tr>
</tbody>
</table>

ENGINE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>PERKINS</td>
</tr>
<tr>
<td>Engine Model</td>
<td>4016-61TRG3</td>
</tr>
<tr>
<td>Number of Cylinder (L)</td>
<td>16 cylinders - V type</td>
</tr>
<tr>
<td>Bore (mm.)</td>
<td>160</td>
</tr>
<tr>
<td>Stroke (mm.)</td>
<td>190</td>
</tr>
</tbody>
</table>

Manufacturer reserves the right to make change in the model, technical specifications, color, equipment, accessories and images without prior notice. (09.04.2020)
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement (lt.)</td>
<td>61.123</td>
</tr>
<tr>
<td>Aspiration</td>
<td>Turbo Charged</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>13.0:1</td>
</tr>
<tr>
<td>RPM (d/dk)</td>
<td>1500</td>
</tr>
<tr>
<td>Oil Capacity (Total With Filter) (lt)</td>
<td>213</td>
</tr>
<tr>
<td>Standby Power (kW/HP)</td>
<td>2183/2926,27</td>
</tr>
<tr>
<td>Block Heater QTY</td>
<td>2</td>
</tr>
<tr>
<td>Block Heater Power (Watt)</td>
<td>3000</td>
</tr>
<tr>
<td>Fuel Type</td>
<td>Diesel</td>
</tr>
<tr>
<td>Injection Type and System</td>
<td>Direct</td>
</tr>
<tr>
<td>Type of Fuel Pump</td>
<td>Mechanical</td>
</tr>
<tr>
<td>Governor System</td>
<td>Electronic</td>
</tr>
<tr>
<td>Operating Voltage (Vdc)</td>
<td>24 Vdc</td>
</tr>
<tr>
<td>Battery and Capacity (Qty/Ah)</td>
<td>4x143</td>
</tr>
<tr>
<td>Charge Alternator (A)</td>
<td>55</td>
</tr>
<tr>
<td>Cooling Method</td>
<td>Water Cooled</td>
</tr>
<tr>
<td>Cooling Fan Air Flow (m3/min)</td>
<td>3269.4</td>
</tr>
<tr>
<td>Coolant Capacity (engine only / with radiator) (lt)</td>
<td>/703.24</td>
</tr>
<tr>
<td>Air Filter</td>
<td>Dry Type</td>
</tr>
<tr>
<td>Fuel Cons. Prime With %100 Load (lt/hr)</td>
<td>470</td>
</tr>
<tr>
<td>Fuel Cons. Prime With %75 Load (lt/hr)</td>
<td>344</td>
</tr>
<tr>
<td>Fuel Cons. Prime With %50 Load (lt/hr)</td>
<td>234</td>
</tr>
</tbody>
</table>

**ALTERNATOR CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Stamford</td>
</tr>
<tr>
<td>Alternator Made and Model</td>
<td>PI734H</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>50</td>
</tr>
<tr>
<td>Power (kVA)</td>
<td>2325</td>
</tr>
<tr>
<td>VOLTAGE (V)</td>
<td>400</td>
</tr>
<tr>
<td>Phase</td>
<td>3</td>
</tr>
<tr>
<td>A.V.R.</td>
<td>MX341</td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>(+/-)1%</td>
</tr>
<tr>
<td>Insulation System</td>
<td>H</td>
</tr>
<tr>
<td>Protection</td>
<td>IP23</td>
</tr>
<tr>
<td>Rated Power Factor</td>
<td>0.8</td>
</tr>
<tr>
<td>WEIGHT COMP. GENERATOR (Kg)</td>
<td>4329</td>
</tr>
<tr>
<td>COOLING AIR (m³/min)</td>
<td>177</td>
</tr>
</tbody>
</table>

**Open Gen.Set Dimensions (mm)**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH</td>
<td>9000</td>
</tr>
<tr>
<td>WIDTH</td>
<td>2800</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th>Control Module</th>
<th>Comap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Module Model</td>
<td>InteliGen NT</td>
</tr>
<tr>
<td>Communication Ports</td>
<td>MODBUS</td>
</tr>
</tbody>
</table>

1. Start
2. Stop
3. Mode > OFF > MAN > AUT > TEST
4. Fault Reset
5. Mode < OFF < MAN < AUT < TEST
6. Horn Reset
7. GCB control (Open/Close)
8. MCB control (Open/Close)
9. Enter
10. 5% Increase of edited setpoint’s value.
11. 5% decrease of edited setpoint’s value.
12. Decrease setpoint value.
13. Increase setpoint value.
Devices

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

CONSTRUCTION and FINISH

Components installed in sheet steel enclosure.
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 proper panel visibility.

GENERATING SET CONTROL UNIT

195Vac to 264Vac input voltage range
45Hz to 440Hz input supply frequency range
Capability to work direct from 240Vdc to 365Vdc supply voltage
27.6Vdc factory set DC output terminal voltage (option up to 29.4Vdc)
5.0Acdc continuous output current into load
Capability to work continuously into short-circuit
Parallel connection for higher output current rating and redundant operation
Series connection capability for higher output voltage requirements
No cooling fans used for high operational reliability
Aluminum alloy case for robust handling and easy mounting

STANDARD SPECIFICATIONS

Comprehensive gen-set controller for both single and multiple gensets Parallel operation up to 32 gen-sets operating in standby or paralleling modes
To be used in conjunction with detachable colour displays InteliVision 5 or InteliVision 8
Support of engines with ECU (Electronic Control Unit)
Complete integrated gen-set solution and signal sharing via CAN bus – minimum external components needed
Many communication options – easy remote supervising and servicing
Load sharing and VAr sharing via CAN Virtual shared inputs and outputs via CAN Support of wide range of applications

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Single or multiple gen-sets in parallel to mains operation with automatic back up function, multiple island operation
Advanced power management function
Customizable load control in parallel to mains
Wide range of ECU support
Highly configurable
Timers, Internal PLC, Force values and more
Active e-mail messaging and SMS with optional communication module
Stop, Manual, Automatic, Test, Start, Silent / Lamp test,
Automatic synchronization and power control AMF function, Baseload, Import / Export, Peak shaving, Voltage and PF kontrol (AVR)
True RMS (TRMS) is used with Voltage, Current and Power measurement

**Instruments**

- **ENGINE**
  - Engine Speed
  - Oil Pressure
  - Water Temperature
  - Engine Running Hours
  - Battery Voltage
  - Maintenance Plan

- **GENERATOR**
  - Voltage (L-L, L-N)
  - Current (L1-L2-L3)
  - Frequency
  - Earth leakage
  - kW
  - Power Factor
  - kVAR
  - kWh, kVAh, kVArh

- **MAINS**
  - Voltage (L-L, L-N)
  - Frequency

- **PROTECTION CIRCUITS**
  - Charge failure
  - Low Battery Voltage
  - Stop Failure
  - Low Fuel Level (ops)
  - Overload kW
  - Reverse phase sequence
PRE-ALARMS
Low Oil Pressure
High engine temperature
Low Engine Temperature
Low / High engine speed
Low / High generator frequency
Low / High generator voltage
ECU warning

STOP ALARMS
Start failure
Emergency stop
Low oil pressure
High engine temperature
Low water level
Low / High engine speed
Low / High generator frequency
Low / High generator voltage
Oil pressure sensor open circuit
Phase direction

Options
High oil temperature - Shutdown
Low fuel level - Shutdown
Low fuel level - Alarm
High fuel level - Alarm
Customizable load control in parallel with the network
Wide range of ECU support
Highly configurable
Timers, Internal PLC, Force values and more are compatible with ComAp's InteliVision displays
Active e-mail messaging and SMS with communication module

Standards
EN 60068-2-6 ed.2:2008
EN 60068-2-30, May 2000
EN 61010-1:2003
EN 60068-2-27 ed.2:2010
EN 60068-2-64
VDE AR N 4105:2011; DIN VDE V 0124-100:2012 (Cl. 5.3.3, 5.3.4, 5.3.6, 5.4.3, 5.4.5, 5.4.6, 5.5)
BDEW Medium-Voltage Guideline: 2008; FGW TR3:2013 (Clauses 4.2.2, 4.2.3, 4.2.4, 4.3.2, 4.3.3, 4.3.4., 4.5, 4.6., 4.7)

STATIC BATTERY CHARGER
EBC 2405M is designed and optimized for charging all types of Lead Acid batteries (including jel type sealed Lead Acid batteries), protecting the battery and extending its useful life time.

EBC 2405M can deliver continuous charging current of 5A into 24V battery system (voltage is set to 27.6Vdc, with an option of up to 29.4Vdc) These battery chargers are designed with performance in mind and special care is taken for protecting and extending the life-time of the battery.

EBC 2405M is designed with “Switched Mode” technology, where the switching transistor has only two states, ON or OFF, which increases the overall efficiency, hence reduces the excess heat dissipation and in return, increasing the device life-time and reliability.

The control system is also designed in such a way that; battery is charged in three stages:

- Constant current mode (protecting battery cells)
- Constant voltage mode (reducing the charge current)
- Float charge (compensation of internal self-discharge)

Constant current mode makes sure that; when the battery is drained down below its rated capacity, the high charge current flow into the battery is limited in order to protect the cells and reduce damage to the plates.

As the battery capacity is recovered, each cell voltage reaches up to 2.30Vdc to 2.45Vdc level, which means that the required charging current starts to reduce.

When the required battery terminal voltage is fully reached, the charger keeps supplying just enough current in order to compensate for the internal self-discharge (float charge). This ensures that the battery can maintain its high charge state and deliver its rated output current, when ever required.

**STANDARD SPECIFICATIONS**

- Water cooled diesel engine
- Radiator and mechanical fan
- Protective cage to prevent rotating and touching hot parts
- Electric starter and charge alternator
- Battery (lead acid), cables and stand
- Engine block water heater
- Steel chassis and anti-vibration wedges
- Fuel tank separate from the group (Açıkset group)
- Flexible fuel connection hoses
- Alternator with single bearing and H insulation class
- Industrial capacity muffler and flexible steel compensator
- Electronic battery charger
- Operating and installation instructions
- The frequency and voltage regulation of the groups lifts 100% load according to NFPA110 in accordance with ISO 8528-5.

**OPTIONAL EQUIPMENTS**

- Remote radiator cooling
- Fuel-water separator filter
- Oil heater
- Anti-condensation heater,
- Bigger Power rate alternator

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### Output Breaker

**CONTROL PANEL**
- Automatic synchronization and power control system (multiple parallel generator)
- Continuous parallel system with the network
- Network synchronization system
- Remote communication and control
- Remote alarm panel
- Alarm output relays
- Earth leakage, single generator
- Charging ammeter

**TRANSFER BOARD**
- Three or four-pole ATS system
- Three or four-pole motorized output breaker

### AUXILIARY EQUIPMENT

- **Main Fuel Tank**
  - Automatic or manual fuel filling system
- **Oil drain, electric pump**
- **Low and high fuel level alarm**
- Exhaust muffler, built-in type
- Enclosure cabinet; soundproof type or open area type
- **Air duct adapter (radiator front)**
- Motorized roller shutter (air inlet and outlet circuit)
- **Soundproof duct (air inlet and outlet circuit)**
- Tool kit (for maintenance)
- Maintenance kit for 1500/3000 working hours
- Antifreeze and engine lubricating oil (for -30 °C ambient temperature)

### AKSA CERTIFICATES
- ISO 14001-2004
- TS ISO 8528
- TS ISO 9001-2008
- CE
- SZUTEST
- 2000/14/EC

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