aksa POWER GENERATION

TSACO توسعه صنایع دیزلی مینا

AP 2000 DCC

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.

Power (kVA)

3 Phase,50 Hz, PF 0.8

VOLTAGE	STANDBY RATING (ESP)		DCC RATING		DCC Amper
	kW	kVA	kW	kVA	
400/231	1600,00	2000,00	1480,00	1850,00	2670,32

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 utility.

DCC:Data Center Continous Power ratings, as defined, meet the Uptime Institute Tier III and IV requirements as detaled in the Uptime Institute Tier Standarts:Topology. The power ratings of Standby and DCC data, given above have been identified according to conditions of 100kPa barometric pressure (110m. altitude), 25 C ambient temperature.
*Data tolerance %+- 1,5.

General Characteristics

Model Name	AP2000
Frequency (Hz)	50
Fuel Type	Diesel
Engine Made and Model	PERKINS 4016-61TRG1
Alternator Made and Model	ECO 46-1L/4
Control Panel Model	InteliGen NT

ENGINE SPECIFICATIONS

Engine	PERKINS
Engine Model	4016-61TRG1
Number of Cylinder (L)	16 cylinders - V type
Bore (mm.)	160
Stroke (mm.)	190
Displacement (lt.)	61.123
Aspiration	Turbo Charged

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Compression Ratio	13.1
RPM (d/dk)	1500
Oil Capacity (Total With Filter) (lt)	213
Standby Power (kW/HP)	1774/2379
DCC Rating (kW/HP)	1648/2210
Block Heater QTY	2
Block Heater Power (Watt)	3000
Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Mechanical
Governor System	Electronic
Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah) / CCA	4x143 / 2300
Charge Alternator (A)	55
Cooling Method	Water Cooled
Cooling Fan Air Flow (m³/min)	1896
Intake Air Flow (DCC) (liter/s)	2583.33
Coolant Capacity (engine only / with radiator) (lt)	95 /703.24
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (lt/hr)	384
Fuel Cons. Prime With %75 Load (lt/hr)	300
Fuel Cons. Prime With %50 Load (lt/hr)	198

ALTERNATOR CHARACTERISTICS

Manufacturer	Mecc Alte
Alternator Made and Model	ECO 46-1L/4
Frequency (Hz)	50
Power (kVA)	2100
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)	3810
COOLING AIR (m³/min)	135

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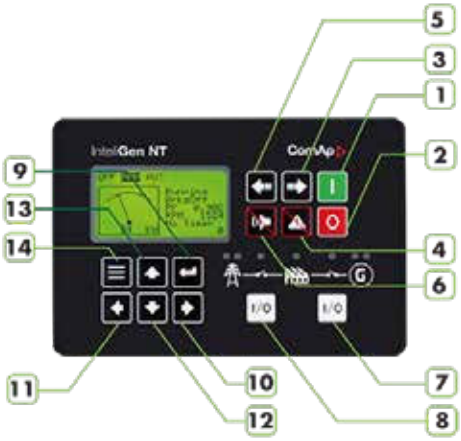
Open Gen.Set Dimensions (mm)

LENGTH	9000
WIDTH	2800
HEIGHT	3307
DRY WEIGHT (kg.)	11000

Control Panel

Control Module	Comap
Control Module Model	InteliGen NT
Communication Ports	MODBUS



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.
14.Escape.

Devices

InteliGen NT 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.

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

195Vac to 264Vac input volt-age range

45Hz to 440Hz input supply frequency range

Capability to work direct from 240Vdc to 365Vdc sup-ply voltage

27.6Vdc factory set DC out-put terminal voltage (option up to 29.4Vdc)

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5.0Adc continuous output current into load

Capability to work continu-ously 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 ro-bust handling and easy mounting

STANDARD SPECIFICATIONS

Comprehensive gen-set controller for both single and multiple gensets Parallel operation up to 32 gen-setsoperating 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

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

ENGİNE

Engine Speed

Oil Pressure

Water Temperature

Engine Runing Hours

Battery Voltage

Maintenance Plan

GENERATOR

Voltage (L-L, L-N)

Current (L1-L2-L3)

Frequency

Earth leakage

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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

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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 modüle

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 opti-mized for charging all types of Lead Acid batteries (including jell type sealed Lead Acid batteries), protecting the battery and extend-ing 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 out-put current, when ever required.

STANDARD SPECIFICATIONS

- Water cooled diesel engine
- Radiator and mechanical fan
- Protective cage to prevent rotating and touching hot parts
- Output breaker
- Electric starter and charge alternator
- Battery (lead acid), cables and stand
- Automatic synchronization and power control system (multiple parallel generator)

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- Circulation pump (for engine block heater)
- 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

OPTIONAL EQUIPMENTS

ENGINE
Remote radiator cooling
Fuel-water separator filter
Oil heater
ALTERNATOR
Anti-condensation heater,
Bigger Power rate alternator
CONTROL PANEL
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, critical ytpe
Enclosure cabinet; soundproof type or open area type
Tool kit (for maintenance)
Maintenance kit for 1500/3000 working hours
Antifreeze and engine lubricating oil (for -30 ° C ambient temperature)

AKSA CERTIFICATES

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

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