

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

3 Phase,50 Hz, PF 0.8

Voltage (V)	STANDBY RATING (ESP)		DCC RATING (DCP)		DCC CURRENT (A)
	kW	kVA	kW	kVA	
400 / 231	1515.2	1894	1439.20	1799	2734

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.

Data Center Continuous (DCP) : Data centre power is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours.
*Data tolerance ±5%

General Characteristics

Model Name	AP 1878
Frequency (Hz)	50
Fuel Type	Diesel
Engine Make and Model	Perkins 4012-46TAG3A
Alternator Make and Model	Stamford PI734E
Control Panel Model	InteliGen NT
Canopy	OpenGenset

Engine Specifications

General Data

Manufacturer	Perkins
Engine Model	4012-46TAG3A

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Number of Cylinders / Type	12 cylinders - V type
Bore mm (in)	160
Stroke mm (in)	190
Displacement l (cu. In)	45.842
Compression Ratio	13.0:1
Engine Speed (rpm)	1500
Standby Power (kW/hp)	1643/2202.41
DCC Power (kW/hp)	1500/2010.72
Block Heater (QTY)	2
Block Heater Power (Watt)	3000
Governor System	Electronic
Air Filter	Dry Type
Aspiration	Turbo Charged

Lubrication System

Oil Capacity l (qal)	177
Max. Oil Temperature ºC (F)	105

Fuel System

Fuel Type	Diesel
Injection Type	Direct
Type of Fuel Pump	Mechanical

Electrical System

Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	4x143
Charge Alternator (A)	40

Cooling System

Cooling Method	Water Cooled

Exhaust System

Exhaust Gas Flow (m³/min)	350
Exhaust Back Pressure in-Hg (kPa)	5
Exhaust Gas Temperature ºC (F)	480
Heat Rejection to Exhaust kW (BTU/min)	1219

Radiator

Total Coolant Capacity (l)	339.1
Cooling Fan Air Flow m³/min (ft³/min)	1800

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External Restriction to Cooling Airflow (Pa)	125

Fuel Consumption

Fuel Cons. @100% DCC Load l/h (kg/h)	370
Fuel Cons. @75% DCC Load l/h (kg/h)	275
Fuel Cons. @50% DCC Load l/h (kg/h)	187

Alternator Characteristics

Manufacturer	Stamford
Alternator Model	PI734E
Frequency (Hz)	50
Power (kVA)	1900
Voltage (V)	400
Phase	3
A.V.R.	MX341
Voltage Regulation	1
Insulation Class	H
Rated Power Factor	0.8
Weight Complete Generator (kg)	3556
Cooling Air (m^3/min)	161.4

Open Generator Set Dımensıons

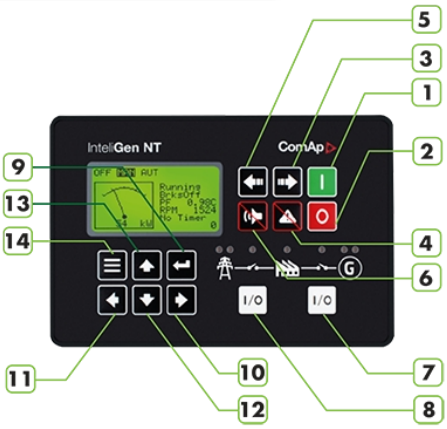
Length mm	5320
Width mm	2220
Height mm	2790
Full Tank Capacity (l)	2000

Control Panel

Manufacturer	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)

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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.

Standard Devices

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

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 out-put terminal voltage (option up to 29.4Vdc)
5.0Adc 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 are used for high operational reliability
Aluminum alloy case for robust handling and easy mounting

Construction and Finish

Components installed in a sheet steel enclosure.
Phosphate chemical, pre-coating of steel provides corrosion resistant surface.
Polyester composite powder topcoat forms high gloss and an 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 the side of generating set with proper panel visibility.

Options

- High oil temperature - Shutdown

Control Panel Compliance List

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- 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 modüle

EN 60068-2-6 ed.2:2008
EN 60068-2-27 ed.2:2010
EN 60068-2-30:2005
25/55°C, RH 95%, 48hours
EN 60068-2-64
EN 61010-1:2003

Static Battery Charger

EBC 2405M is designed and optimized for charging all types of Lead Acid batteries (including jell type sealed Lead Acid batteries), protecting the battery and extending its useful lifetime EBC 2405M can deliver a 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 lifetime 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 reducing the excess heat dissipation and in return, increasing the device lifetime 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 whenever required.

Standard Equipment

- Water cooled diesel engine
- Radiator and electrical motor driven fan
- Protective cage to prevent rotating and touching hot parts
- Output breaker

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- Electric starter and charge alternator
- Battery (lead acid), cables and stand
- Automatic synchronization and power control system (multiple parallel generator)
- Circulation pump (for engine block heater)
- Engine block water heater
- Steel chassis and anti-vibration wedges
- Fuel tank separate from the 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

Optıonal Equıpment

Engine

- Fuel-Water Seperator Filter
- Oil heater

Alternator

- Anti-Condensation Heater
- Over sized alternator
- PMG excitation + AVR
- Main line circuit breaker

Control Panel

- Automatic synchronising and power control system (Multi gen-set Parallel)
- Parallel system with mains
- Transition synchronization with mains
- Alarm output relays
- Earth fault, single set
- Parallel system with mains
- Remote relay output
- Remote communication with modem
- Charge Ammeter

Transfer Panel

- Three or four pole contactor
- Three or four pole motor operated circuit breaker

Auxiliary Equipment

- Main Fuel Tank
- Automatic or manual fuel filling system
- Electrical oil drain pump
- Low and high fuel level alarm
- Inlet and outlet motorized louvers
- Inlet and outlet acoustic baffles
- Tool kit for maintenance
- 1500/3000 hours maintenance kit
- Supplied with oil and coolant (-30°C)

Exhaust

- Residential Silencer
- Silencer Spark Arrester
- Critical Silencer
- Catalytic Convertor

Canopy

- Galvanized Coating
- ISO Container
- Marine Grade Paint

Optional Alternator and Control Panel

Please contact to your reseller for additional Alternator, Control Panel and Breaker Switch options.

Aksa Certificates

Directive

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- 2006/42/EC : Machinery Safety Directive
- 2014/30/EU : Electromagnetic Compatibility Directive
- 2014/35/EU : Low Voltage Directive

Standarts

- TS ISO 8528-5:2022 / TS EN ISO 8528-13:2018 : Reciprocating internal combustion engine-driven alternating current generating sets- Part:13: Safety

Quality Management Systems
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
ISO 50001:2018
ISO 27001:2013
ISO 10002:2018

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