

## 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	1128.0	1410	1008.00	1260	2035

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  $\pm 5\%$

## General Characteristics

Model Name	AC 1411
Frequency (Hz)	50
Fuel Type	Diesel
Engine Make and Model	Cummins KTA50-G3
Alternator Make and Model	Stamford PI734B
Control Panel Model	InteliGen NT
Canopy	OpenGenset

## Engine Specifications

### General Data

Manufacturer	Cummins
Engine Model	KTA50-G3



Number of Cylinders / Type	16 cylinders - V type
Bore mm (in)	159
Stroke mm (in)	159
Displacement l (cu. In)	50.3
Compression Ratio	13.9:1
Engine Speed (rpm)	1500
Standby Power (kW/hp)	1227/1645
DCC Power (kW/hp)	1097/1470
Block Heater (QTY)	2
Block Heater Power (Watt)	3000
Governor System	Electronic
Air Filter	Dry Type
Aspiration	Turbo Charged and After Cooled

#### Lubrication System

Oil Capacity l (gal)	177
Max. Oil Temperature °C (F)	121

#### Fuel System

Fuel Type	Diesel
Injection Type	Direct
Type of Fuel Pump	Cummins PT

#### Electrical System

Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	4x143
Charge Alternator (A)	35

#### Cooling System

Cooling Method	Water Cooled
Coolant Capacity (engine only) l (gal)	161

#### Exhaust System

Exhaust Gas Flow (m <sup>3</sup> /min)	240.70
Exhaust Back Pressure in-Hg (kPa)	6.8
Exhaust Gas Temperature °C (F)	525
Heat Rejection to Exhaust kW (BTU/min)	845

#### Radiator

Total Coolant Capacity (l)	415
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Cooling Fan Air Flow m <sup>3</sup> /min (ft <sup>3</sup> /min)	1770
External Restriction to Cooling Airflow (Pa)	125

### Fuel Consumption

Fuel Cons. @100% DCC Load l/h (kg/h)	261
Fuel Cons. @75% DCC Load l/h (kg/h)	199
Fuel Cons. @50% DCC Load l/h (kg/h)	139

### Alternator Characteristics

Manufacturer	Stamford
Alternator Model	PI734B
Frequency (Hz)	50
Power (kVA)	1400
Voltage (V)	400
Phase	3
A.V.R.	MX341
Voltage Regulation	1
Insulation Class	H
Protection Class	IP23
Rated Power Factor	0.8
Weight Complete Generator (kg)	2760
Cooling Air (m <sup>3</sup> /min)	161.4

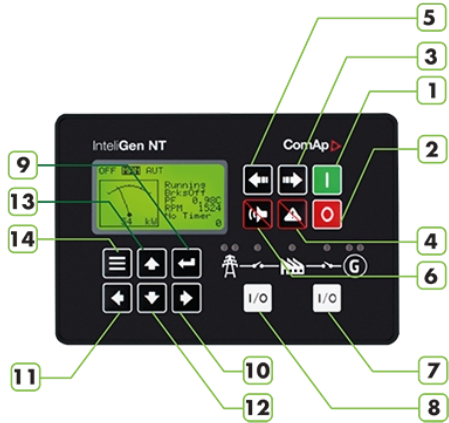
### Open Generator Set Dimensions

Length mm	4940
Width mm	2100
Height mm	2400
Open Gen.Set Gross Weight Dry kg	9900
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)
- 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)  
 5.0A dc 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**



- 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 IntelliVision displays
- Active e-mail messaging and SMS with communication module

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



- 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

## Optional Equipment

### Engine

- Fuel-Water Separator Filter
- Oil heater

### 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

### 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)

### Canopy

- Galvanized Coating
- ISO Container
- Marine Grade Paint

### Alternator

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

### Transfer Panel

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

### Exhaust

- Residential Silencer
- Silencer Spark Arrester
- Critical Silencer
- Catalytic Converter

### Optional Alternator and Control Panel

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

## Aksa Certificates

### Directive



- 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