



## Introduction

Aksa power generation system, providing optimum performance, and reliability, for stationary standby, prime power, and continuous duty applications. All generator sets are factory build, and production tested.

## Power

3 Phase,50 Hz, PF 0.8

| Voltage (V) | STANDBY RATING (ESP) | | PRIME RATING (PRP) | | STANDBY CURRENT (A) |
|---|---|---|---|---|---|
| | kW | kVA | kW | kVA | |
| 400 / 231 | 1320.0 | 1650 | 1200.00 | 1500 | 2382 |

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.

## General Characteristics

| | |
|---|---|
| Model Name | AC 1650 |
| Frequency (Hz) | 50 |
| Fuel Type | Diesel |
| Engine Make and Model | Cummins KTA50-GS8 |
| Alternator Make and Model | Mecc Alte ECO 46-1S/4 A |
| Control Panel Model | DSE 7320 |
| Canopy | AK 98 |
| Noise Level @1m , @7m (dB(A)) | 92.8 / 83.3 |

## Engine Specifications

### General Data

| | |
|---|---|
| Manufacturer | Cummins |
| Engine Model | KTA50-GS8 |
| Number of Cylinders / Type | 16 cylinders - V type |
| Bore mm (in) | 159 |

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| | |
|---|---|
| Stroke mm (in) | 159 |
| Displacement l (cu. In) | 50.3 |
| Compression Ratio | 14.9:1 |
| Engine Speed (rpm) | 1500 |
| Standby Power (kW/hp) | 1429/1915 |
| Prime Power (kW/hp) | 1287/1725 |
| 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 (qal) | 204 |
| Max. Oil Temperature ºC (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) | 165 |

## Exhaust System

| | |
|---|---|
| Exhaust Gas Flow (m³/min) | 261 |
| Exhaust Back Pressure in-Hg (kPa) | 6.8 |
| Exhaust Gas Temperature ºC (F) | 510 |
| Heat Rejection to Exhaust kW (BTU/min) | 954 |

## Radiator

| | |
|---|---|
| Total Coolant Capacity (l) | 420 |
| Cooling Fan Air Flow m³/min (ft³/min) | 2631 |
| External Restriction to Cooling Airflow (Pa) | 125 |

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## Fuel Consumption

| | |
|---|---|
| Fuel Cons. @100% Prime Load l/h (kg/h) | 309 |
| Fuel Cons. @75% Prime Load l/h (kg/h) | 238 |
| Fuel Cons. @50% Prime Load l/h (kg/h) | 167 |

## Alternator Characteristics

| | |
|---|---|
| Manufacturer | Mecc Alte |
| Alternator Model | ECO 46-1S/4 A |
| Frequency (Hz) | 50 |
| Power (kVA) | 1500 |
| Voltage (V) | 400 |
| Phase | 3 |
| A.V.R. | DER1 |
| Voltage Regulation | 0.5 |
| Insulation Class | H |
| Protection Class | IP23 |
| Rated Power Factor | 0.8 |
| Weight Complete Generator (kg) | 3010 |
| Cooling Air (m³/min) | 135 |

## Open Generator Set Dımensıons

| | |
|---|---|
| Length mm | 5384 |
| Width mm | 1950 |
| Height mm | 2446 |
| Open Gen.Set Gross Weight Dry kg | 10400 |
| Full Tank Capacity (l) | 2000 |

## Canopy Characteristics

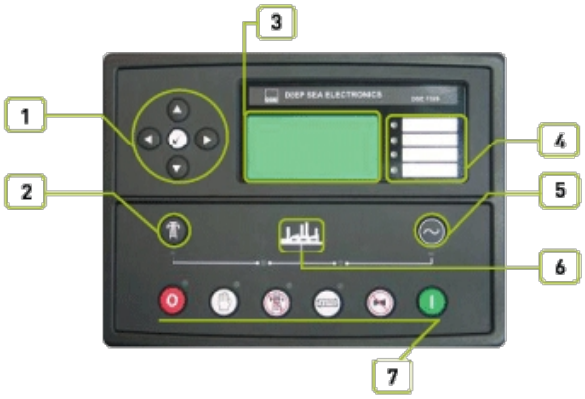
| | |
|---|---|
| Length mm | 9000 |
| Width mm | 2270 |
| Height mm | 2581 |
| Dry Weight kg | 15100 |
| Full Tank Capacity (l) | 1900 |

## Control Panel

| | |
|---|---|
| Manufacturer | DSE |
| Control Module Model | DSE 7320 |

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| | |
|---|---|
| Communication Ports | MODBUS |




1. Menu navigation buttons
2. Close mains button
3. Main Status and instrumentation display
4. Alarm LED's
5. Close generator button
6. Status LED's
7. Operation selecting buttons

## Standard Devices

DSE model 7320, Auto Mains Failure control module, with a highly sophisticated level of new features and functions
Static battery charger, Fuses for control circuits

## Control Unit

- The DSE 7320 control module is a standard addition to our generator sets from 220 kVA upwards and it has been designed to start and stop diesel and gas generating sets that include electronic and non electronic engines.
- The DSE 7320 includes the additional capability of being able to monitor a mains (utility) supply and is therefore suitable for controlling a standby generating set in conjunction with an automatic transfer switch.
- The DSE7320 also indicates operational status and fault conditions, automatically shutting down the generating set and indicating faults by means of its LCD display on the front panel.

## 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

The Control panel is mounted at the generating set baseframe on robust steel stand or power module. Located at side of generating set with properly panel visibility.

## Engine

-Engine speed
-Oil pressure
-Coolant temperature
-Run time
-Battery volts
-Engine maintenance due

## Shut Down

-Fail to start
-Emergency stop
-Low oil pressure
-High engine temperature
-Low coolant level
-Under/over speed
-Under/over generator frequency
-Under/over generator voltage
-Oil pressure sensor open
-Phase rotation

## Warnings

-Charge failure
-Battery under voltage
-Fail to stop
-Low fuel level (opt.)
-kW over load
-Negative phase sequence
-Loss of speed signal

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### Generator

-Voltage (L-L, L-N)
-Current (L1-L2-L3)
-Frequency
-Earthcurrent
-kW
-Pf
-kVAr
-kWh, kVAh, kVArh
-Phasesequence

### Pre-alarms

-Low oil pressure
-High engine temperature
-Low engine temperature
-Under/over speed
-Under/over generator frequency
-Under/over generator voltage
-ECU warning

### Electrical Trip

-Earth fault
-kW over load
-Generator over current
-Negative phase sequence

### Mains

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

### Expensions

-Additional LED module (2548)
-Expansion relay module (2157)
-Expansion input module (2130)

### Options

- High oil temperature shut down
- Low fuel level shut down
- Low fuel level alarm
- High fuel level alarm

### Control Panel Compliance List

- Electrical Safety / Electro Magnetic Compatibility (EMC)
- BS EN 61000-6-2 EMC Generic Immunity Standard
- BS EN 61000-6-4 EMC Generic Emission Standard
- BS EN 60950 Electrical Safety

### Static Battery Charger

- Battery charger is manufactured with switching-mode and SMD technology and it has high efficiency.
- Battery charger models' output V-I characteristic is very close to square
- 2405 has fully output shot circuit protection and it can be used as a current source.
- 2405 charger has high efficiency, long life, low failure rate, light-weight and low heat radiated in accordance with linear alternatives.
- The charger is fitted with a protection diode across the output.
- Charge fail output is available.
- Connect charge fail relay coil between positive output and CF output.
- Input: 196-264V.
- Output: 27,6V 5A or 13,8V 5A.

## Standard Equipment

- Water cooled, Diesel engine
- Radiator with mechanical fan
- Protective grille for rotating and hot parts
- Electric starter and charge alternator
- Starting battery (with lead acid) including rack and cables
- Engine coolant heater
- Steel base frame and anti-vibration isolators
- Spare external fuel tank
- Flexible fuel connection hoses
- Single bearing, class H alternator
- Industrial exhaust silencer and steel bellows supplied separately(for open sets)
- Static battery charger

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- Manual for application and installation

## 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 or manual 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**

- 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

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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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