

## DDWS 100

| POWER RATING | 1500 rpm/50 Hz     | 1800 rpm/60 Hz     |
|--------------|--------------------|--------------------|
| Prime        | 101.1 kVA, 80.9 kW | 107.9 kVA, 86.4 kW |
| Standby      | 111.4 kVA, 89.1 kW | 118.7 kVA, 95.0 kW |

Generator set consisting of engine and alternator mounted on a fabricated steel profile base, painted with a phosphate primer and top coat.

The alternator is directly coupled to the engine flywheel housing to SAE standards. The rotor is fixed to the flywheel using steel discs for flexibility. Perfect alignment and the absence of vibration are thus guaranteed.

The unit is fixed to the baseframe using anti-vibration pads.

The set is supplied with a **SOUNDPROOFED METAL CANOPY** in all versions. This canopy is covered on the inside with soundproofing material which added to the silencer gives a **noise level of 68 db(A) at 7 mts.**

### ENGINE

4-stroke diesel engine with direct injection.

|                                                         |                               |
|---------------------------------------------------------|-------------------------------|
| Manufacturer .....                                      | Deutz                         |
| Model.....                                              | BF4M1013EC                    |
| No. of cylinders .....                                  | 4                             |
| Engine capacity .....                                   | 4 760 cc                      |
| Bore .....                                              | 108 mm                        |
| Stroke .....                                            | 130 mm                        |
| Compression ratio .....                                 | 17.5: 1                       |
| Aspiration.....                                         | Turbocharged                  |
| Cooling.....                                            | Water cooled.                 |
| Engine speed.....                                       | 1500 / 1800 rpm               |
| Prime power 1500 / 1800 rpm .....                       | 133.15 / 141.98 HP ISO 3046/1 |
| Fuel consumption 100% load 1500 / 1800 rpm .....        | 23 / 24.4 ltr/h DIN 51601     |
| Fuel tank capacity.....                                 | 158 litres                    |
| Approximate running time without refill 1500/1800rpm .. | 6.9 / 6.5 hours               |
| Noise level 1500 / 1800 rpm .....                       | 89.5 / 91 dB(A) at 1 metre.   |

### Cooling system

Closed circuit externally water cooled with expander tank outside radiator. Pusher fan with guard.

|                                                |                                   |
|------------------------------------------------|-----------------------------------|
| Cooling air flow from fan 1500 / 1800 rpm..... | 159.1 / 205.3 m <sup>3</sup> /min |
| Cooling system capacity.....                   | 13.5 litres                       |

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## **Lubrication system**

Forced lubrication using excentric rotor type pump. External oil filter

Oil sump capacity..... 14 litres  
Consumption ..... Max. 0.3 % of fuel consumption

## **Air intake system**

Naturally aspirated via dry air filter.

Combustion air flow 1500 / 1800 rpm.....6.33 / 8.03 m3/min

## **Fuel delivery system**

Fuel lift pump integrated into trapezoidal drive belt tensor pulley. Fuel filter and pre-filter.

## **Injection system**

Individual pump for each cylinder, with centrifugal mechanical governor.

## **Electrical system**

12 V kW electric starting system. Axial starter motor. 95 A.h. battery. 55 A battery charging alternator. Oil pressure and engine temperature sensors.

## **Protection system**

Automatic engine shutdown for low oil pressure, low fuel level, high temperature and battery charge defect .

## **Exhaust system**

Consists of silencer with 10 db(A) noise reduction, flexible exhaust pipe and brackets. Residential silencer optional.

Exhaust gas flow 1500 / 1800 rpm.....17.08 / 21.66 m3/min.

## **ALTERNATOR**

Synchronous, three phase and brushless. Self regulation via automatic voltage regulator maintaining voltage within +/- 1.5%. Class "H" insulation. All windings are impregnated with polyester resin, making them resistant to acids and oil. IP 23 protection. Electrical characteristics to BS 5000, VDE 0530, UTE 5100, NEMA MG 1-22, CMA IEC 34, CSA 22,2 and AS 1359. Harmonic distortion below 3.5%. Radio interference suppression to BS-800.

Manufacturer ..... Stamford  
Model..... UCI 274 D16  
Power rating..... 110 kVA at 1500; 132 kVA at 1800 rpm  
Voltage (\*)..... 400/220 V three phase  
Frequency..... 50 / 60 Hz  
Speed ..... 1500 / 1800 rpm  
Regulation..... Electronic  
Nominal current 50 / 60 Hz..... 158.8 / 190.5 A (at 400 V)

(\*) 12 wire output permitting reconnection to any existing voltage.

## **VERSIONS**

The DDWS **100** generator set may be supplied in the following versions:

**STATIONARY, MOBILE AND AUTOMATIC**

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## **STATIONARY**

In the stationary version, the set is supplied on a skidbase with a control panel which is operated manually using an ignition key.

Length: 3116 mm

Width: 980 mm

Height: 1803 mm

### ***Control panel***

Metal cabinet, with IP 54 protection, mounted on the frame with anti-vibration pads.

Equipped with:

- Thermo-magnetic circuit breaker.
- 3 ammeters.
- Frequency meter.
- Voltmeter with selector switch..
- Hours run meter.
- Three phase output terminals.
- Engine temperature gauge.
- Fuel gauge.
- On light.
- Heater button.

Control card including: ignition key, start/stop buttons and Indicator lights for low oil pressure, battery charge, high temperature, low fuel level, overload and start-up failure.

## **MOBILE**

Set on baseframe mounted on independent trailer. Includes metal canopy housing control panel which is operated manually via an ignition key.

Length: 4236 mm

Width: 1560 mm

Height: 2123 mm

### ***Metal canopy***

Ideal for outdoor use, it is painted with a phosphate primer and long lasting top coat.

### ***Trailer***

Made up of: wheels with tyres, DIN towing eye, rubber axle suspension and support leg. Jockey wheel on request.

As an option, A TRAILER ADAPTED FOR ROAD TRANSPORTATION may be supplied

### ***Control panel***

Metal cabinet, with IP 54 protection, mounted on the frame with anti-vibration pads.

Equipped with:

- Thermo-magnetic circuit breaker.
- 3 ammeters.
- Frequency meter.
- Voltmeter with selector switch..
- Hours run meter.
- Three phase output terminals.
- Engine temperature gauge.
- Fuel gauge.
- On light.
- Heater button.

Control card including: ignition key, start/stop buttons and Indicator lights for low oil pressure, battery charge, high temperature, low fuel level, overload and start-up failure.

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## **AUTOMATIC**

The automatic version generator set is supplied on a skidbase with an automatic start/stop panel for mains failure.

Length: 3100 mm

Width: 980 mm

Height: 1803 mm

### ***ELECTRICAL PANEL***

Mounted in a metal cabinet with IP 54 protection and supplied loose for wall mounting. Includes monitoring and control, measuring and handling, and transfer system.

#### **Monitoring and control system**

- Automatically monitors the mains, and, if the mains fails (in one or all three phases) connects the consumers to the generator set via mechanically and electrically interlocking contactors. When the mains is restored, the load is reconnected to the mains, the set idles and then stops.
- No. of start up attempts: 3
- Selector switch for Disconnect, Automatic Service, Manual Service and Test
- The set may be selected to run manually or automatically. When running manually a selector switch is used for shutdown, start-up and changeover.
- Three phase voltage monitor with adjustable values.

#### **Measuring and handling equipment**

Consists of the following items:

- 3 Ammeters
- 1 Voltmeter
- 1 mains-generator set voltmeter selector switch.
- 1 Frequency meter
- 1 Battery voltmeter.
- Off button.
- Battery maintenance system
- Battery indicator lamp
- Battery charge indicator lamp.
- Emergency stop mushroom type pushbutton.
- Audible and visual alarm for low fuel level. (Shown as "ALARMS NO STOP").
- Alarm system disconnecting generator set, shutdown, acoustic alarm and visual signals for:
  - Start-up failure
  - Low oil pressure
  - High water / engine body temperature.
  - Overload.
- Protective fuse.
- Thermo-magnetic circuit breaker.

#### **Transfer system**

Made up of two mechanically and electrically interlocking contactors.

WORKING VOLTAGE: 400/220 V

## **HEATER**

In this version, the set incorporates a heater which aids diesel engine start-up and response. It consists of a tank connected to the engine cooling system and a heating element with an adjustable thermostat.