Diesel Generator Set

MTU 12V1600 DS660

400 – 230 V/659 kVA/50 Hz/standby power/series 1600 – 12V1600

Product highlights

Benefits
- Industry-leading average load factor
- Low fuel consumption
- Emissions optimizations available
- High availability and reliability
- Outstanding load acceptance
- Long maintenance intervals

Support
- Global product support offered

Standards
- Engine-generator set is designed and manufactured in facilities certified to standards ISO 2008:9001
- Generator set complies to ISO 8528 and fulfills performance level G3
- Generator meets BS5000; NEMA MG 1; ISO; DIN EN and IEC standards

Available optimizations
- NEA Singapore for off road diesel engines (ORDE)
- Fuel optimized

Wide standard scope of supply
- 4P circuit breaker
- Island operation control panel
- Integrated fuel tank
- Industrial silencer (15 dB(A))
- Batteries & battery charger

Complete range of accessories available
- Sound attenuated enclosure
- Fuel system accessories
- Control panel & ATS
- Range of additional electronical options

Warranty
- Standard 36 months warranty after shipment

Optional equipment shown. Standard equipment may vary.
Application data

**Engine**
- Manufacturer: MTU
- Model: 12V1600G70F
- Type: 4-cycle
- Arrangement: 12V
- Displacement: 21 l
- Bore: 122 mm
- Stroke: 150 mm
- Compression ratio: 17.5
- Rated rpm: 1500
- Engine governor: ECU 8
- Gross power: 576 kWm
- Air cleaner: dry

**Fuel system**
- Max. fuel flow: 342 l/hr
- Fuel tank capacity: 740 (950) l
- Autonomy: 8 hr

**Fuel consumption**
- At 100% of power rating: 128.6 l/hr

**Liquid capacity**
- Total oil system: 72.5 l
- Total coolant capacity: 99 l

**Generator**
- Generator brand: Mecc-Alte
- Generator type: HM355B2
- Insulation class: H-class
- Bearing: single bearing
- Enclosure: IP23 M
- Exciting system: self-excited, brushless

**Electrical**
- Electric system volts DC: 24
- Number of batteries: 2
- Capacity: 2x 75 Ah

**Air requirements**
- Aspirating: 48 m³/min
- Cooling air flow: 11.7 m³/s

**Exhaust system**
- Gas temp. (stack): 483 °C
- Gas volume at stack temp.: 126 m³/min
- Maximum allowable back pressure: 15 kPa

**Cooling/radiator system**
- Ambient capacity of radiator: 40 (35) °C
- Pressure on rad. exhaust: 0.2 kPa
- Heat rejection to coolant: 250 kW

**Standard and optional features**

**System ratings (kW/kVA)**

<table>
<thead>
<tr>
<th>12V1600 DS660</th>
<th>Standby operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>400 V</td>
</tr>
<tr>
<td>Phase</td>
<td>Three phase</td>
</tr>
<tr>
<td>Hz</td>
<td>50</td>
</tr>
<tr>
<td>kWel*</td>
<td>527.2</td>
</tr>
<tr>
<td>kVA**</td>
<td>659</td>
</tr>
<tr>
<td>Rated AMPS</td>
<td>951.2</td>
</tr>
</tbody>
</table>

* cos phi = 1.0
** cos phi = 0.8

Also available for following voltages 380V & 415V - for details please contact your local MTU dealer.
Standard and optional features

Engine
- 4-stroked diesel engine
- Flywheel housing SAE 1
- Flywheel 14"
- Four-valve, overhead camshaft
- Piston cooling via oil spray nozzle
- Forged crankshaft & connecting rods
- Oil pan
- Lube oil circulation pump
- Dry exhaust manifolds
- Hot components and radiator guards
- Mobile components guards
- Lube oil filters

Fuel system
- Fuel main filter
- Fuel pre-filter with water separator
- Common rail fuel injection
- Integrated fuel tank (level sensor and drain cap incl.)
- Automatic fuel transfer pump
- Heavy-duty fuel pre-filter with water separator
- 3-way valve for fuel filling
- Fuel cooler

Generator
- 3-Phase, synchronos, brushless, self exciting, self regulating, self ventilating alternator
- IP23 M protection degree
- IP23 protection cover
- Bearing temperature sensors
- Insulation class H
- Anti condensation heater
- Permanent magnet

Control panel & electric options
- Control and power electric panel, with measurements devices and controller
- ATS (Automatic Transfer Switch)
- Control version for parallel operation
- Control version for synchronizing a single genset with mains
- Winding temperature sensors
- Remote display
- Expansion module for CAN communication
- Change over power supply for MC7
- Input/output/LED expansion modules for DeepSea controllers
- ModBus connection to customer systems TCP/IP
- Control version for synchronizing with mains without blackout
- Converter kits CAN to RS485/USB/LAN

Circuit breaker/power distribution
- 4 poles manual circuit breaker
  (motorized with DeepSea controllers)

Starting/charging system
- 24V electric system
- Starting batteries installed
- Pre-heating resistance/jacket water heater
- Battery charging alternator
- Battery disconnector
- Battery charger

■ Represents standard features
□ Represents optional features
# Standard and optional features

## Air intake system
- Exhaust turbochargers
- Set of dry-type air filters with containment indicator
- Intercooler, integrated in radiator
- Heavy duty air filter with automatic dust evacuation

## Exhaust system
- Industrial silencer 15 dB(A)
- Residential silencer 35 dB(A)
- Exhaust bellows

## Cooling system
- Coolant circulation pump
- Front type radiator for jacket water and charge aircooling circuit with integrated expansion tank
- Engine mounted fan drive

## Mounting system
- Mounted on steel base frame
- Resilent mounting of engine and generator

## Enclosures
- Sound proof enclosure
- Socket box
- Increased fuel tank capacity

## Documentation & certifications
- Genset & component manuals
- Maintenance schedule
- CE-certification for EU
- Fluids and lubricants specification
Weights and dimensions

Drawing above for illustration purposes only, based on standard open power 400 Volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

<table>
<thead>
<tr>
<th>System</th>
<th>Dimensions (L x W x H)</th>
<th>Weight (wet/with standard accessories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open power unit (OPU)</td>
<td>3600 x 1604 x 2121 mm</td>
<td>4529 kg</td>
</tr>
<tr>
<td>Enclosed power unit</td>
<td>5000 x 2100 x 2369 mm</td>
<td>6739 kg</td>
</tr>
</tbody>
</table>

Consult the factory for accurate weights and dimensions for your specific engine-generator set. Lengths may vary with other voltages. Do not use for installation design.

Sound data

<table>
<thead>
<tr>
<th>Unit type</th>
<th>dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open power unit: dB(A)</td>
<td>109</td>
</tr>
<tr>
<td>Enclosed power unit: dB(A)</td>
<td>88</td>
</tr>
</tbody>
</table>

According to 2000/14/CE.
Sound data is provided at 1m for 75% prime power.

Rating definitions and conditions

- Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789 and DIN 6271. Average load factor: < 85%, max. 500h/year.
- Consult your local MTU distributor for derating information.

Rated power for reference conditions at 25°C and 100m above sea level.

Rolls-Royce Group
www.mtu-solutions.com/powergen