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 liters
- **Bore**: 122 mm
- **Stroke**: 150 mm
- **Compression ratio**: 17.5
- **Rated rpm**: 1500
- **Engine governor**: ECU 8
- **Gross power**: 576 kW
- **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
- **Voltage regulation**: A.V.R. (electronic)
- **Exciting system**: self-excited, brushless

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

**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><strong>Voltage</strong></td>
<td>400 V</td>
</tr>
<tr>
<td><strong>Phase</strong></td>
<td>Three phase</td>
</tr>
<tr>
<td><strong>Hz</strong></td>
<td>50</td>
</tr>
<tr>
<td><strong>kWe</strong></td>
<td>527.2</td>
</tr>
<tr>
<td><strong>kVA</strong></td>
<td>659</td>
</tr>
<tr>
<td><strong>Rated AMPS</strong></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.

---

1 Technical data is for a fuel-optimized unit.
# Standard and optional features

## Engine
- 4-strokes 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 filter

## 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, syncronos, 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
- Programmable timer for MM7 and MC7
- 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

## 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

| Represents standard features |
| Represents optional features |
# Standard and optional features

## 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
- ■ Resilient 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.