Diesel Generator Set

MTU 12V1600 DS660

400 – 230 V/600 kVA/50 Hz/prime power/series 1600 – 12V1600

Optional equipment shown. Standard equipment may vary.

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 fullfills performance level G3
— Generator meets BS5000; NEMA MG 1; ISO; DIN EN and IEC standards

Available optimizations
— TA-Luft (NOx < 1500mg/m³ i.N.) optimized
— 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
### Engine
- **Manufacturer**: MTU
- **Model**: 12V1600G10F
- **Type**: 4-cycle
- **Arrangement**: 12V
- **Displacement**: l 21
- **Bore**: mm 122
- **Stroke**: mm 150
- **Compression ratio**: 17.5
- **Rated rpm**: 1500
- **Engine governor**: ECU 8
- **Gross power**: kWm 524
- **Fuel system**:
  - Max. fuel flow: l/hr 342
  - Fuel tank capacity: OPU (EPU) in l 740 (950)
  - Autonomy: hr 8
- **Fuel consumption**:
  - At 100% of power rating: 116.99
  - At 75% of power rating: 90.94
  - At 50% of power rating: 63.06
- **Liquid capacity**:
  - Total oil system: l 72.5
  - Total coolant capacity: l 99

### 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**: Ah 2x 75
- **Air requirements**:
  - Aspirating: m³/min 36
  - Cooling air flow: m³/s 11.7

### Exhaust system
- **Gas temp. (stack): °C**: 482
- **Gas volume at stack temp.: m³/min**: 90
- **Maximum allowable back pressure: kPa**: 15

### Cooling/radiator system
- **Ambient capacity of radiator: OPU (EPU) in °C**: 40 (35)
- **Pressure on rad. exhaust: kPa**: 0.2
- **Heat rejection to coolant: kW**: 231

### Standard and optional features

#### System ratings (kW/kVA)

<table>
<thead>
<tr>
<th>12V1600 DS660</th>
<th><strong>Prime operation</strong></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>480.0</td>
</tr>
<tr>
<td><strong>kVA</strong></td>
<td>600</td>
</tr>
<tr>
<td><strong>Rated AMPS</strong></td>
<td>866.0</td>
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</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.

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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, synchromous, 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

<table>
<thead>
<tr>
<th>Represents standard features</th>
<th>Represents optional features</th>
</tr>
</thead>
</table>
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
- □ 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>
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<th>Unit Type</th>
<th>Sound data</th>
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</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 7m for 75% prime power.

Rating definitions and conditions

— Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789 and DIN 6271.
  Average load factor: < 75%.
— Consult your local MTU distributor for derating information.

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