Diesel Generator Set

**mtu 10V1600 DS560**

400 – 230 V/510 kVA/50 Hz/prime power/series 1600 – 10V1600

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

**Available optimizations**
- NOx emission optimized (NOx < 1500mg/m³ i.N.)
- EU Nonroad St IIIA comp (97/68/EC)
- NEA Singapore for off road diesel engines (ORDE)
- ARAI CPCB Stage II
- Fuel consumption 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
Application data

**Engine**
- Manufacturer: mtu
- Model: 10V1600G20F
- Type: 4-cycle
- Arrangement: 10V
- Displacement: l 17.5
- Bore: mm 122
- Stroke: mm 150
- Compression ratio: 17.5
- Rated rpm: 1500
- Engine governor: ECU 8
- Gross power: kWm 448
- Air cleaner: dry

**Fuel system**
- Max. fuel flow: l/hr 342
- Fuel tank capacity: OPU (EPU) in l 740 (740)
- Autonomy: hr 9

**Fuel consumption**
- At 100% of power rating: l/h 108.87
- At 75% of power rating: 86.34
- At 50% of power rating: 60.69

**Liquid capacity**
- Total oil system: l 60.5
- Total coolant capacity: l 94

**Generator**
- Generator brand: Mecc-Alte
- Generator type: HM355B1
- 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: Ah 2x 75

**Air requirements**
- Aspirating: m³/min 27
- Cooling air flow: m³/s 10.9

**Exhaust system**
- Gas temp. (stack): °C 520
- Gas volume at stack temp.: m³/min 75
- Maximum allowable back pressure: kPa 15

**Cooling/radiator system**
- Ambient capacity of radiator: OPU (EPU) in °C 50 (50)
- Pressure on rad. exhaust: kPa 0.2
- Heat rejection to coolant: kW 216

**Standard and optional features**

**System ratings (kW/kVA)**

<table>
<thead>
<tr>
<th></th>
<th>10V1600 DSS60</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prime operation</strong></td>
<td></td>
</tr>
<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>kWe**</td>
<td>408.0</td>
</tr>
<tr>
<td>kVA**</td>
<td>510</td>
</tr>
<tr>
<td>Rated AMPS</td>
<td>736.1</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-stokes 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
- Winding temperature sensors
- 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 disconnecter
- Battery charger
### 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 (LxWxH)</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>4002 kg</td>
</tr>
<tr>
<td>Enclosed power unit</td>
<td>4500 x 1800 x 2340 mm</td>
<td>5712 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>104</td>
</tr>
<tr>
<td>Enclosed power unit: dB(A)</td>
<td>85</td>
</tr>
</tbody>
</table>

According to 2000/14/CE.

Sound data is provided at 1 m 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.

Rolls-Royce Group

www.mtu-solutions.com/powergen