Diesel Generator Set

MTU 10V1600 DS500

450 kVA/50 Hz/Prime (Exhaust-Optimized)/380 - 415V
Reference MTU 10V1600 DS500 (500 kVA Fuel-Optimized)
for Standby Rating Technical Data

System ratings **

<table>
<thead>
<tr>
<th>Voltage (L-L)</th>
<th>380V</th>
<th>400V</th>
<th>415V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PF</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Hz</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>kW</td>
<td>360</td>
<td>360</td>
<td>360</td>
</tr>
<tr>
<td>kVA</td>
<td>450</td>
<td>450</td>
<td>450</td>
</tr>
<tr>
<td>Amps</td>
<td>684</td>
<td>650</td>
<td>626</td>
</tr>
<tr>
<td>skVA@30% voltage dip</td>
<td>720</td>
<td>960</td>
<td>1,050</td>
</tr>
<tr>
<td>Generator model</td>
<td>572RSL4025</td>
<td>572RSL4027</td>
<td>572RSL4027</td>
</tr>
<tr>
<td>Temp rise</td>
<td>125 °C/40 °C</td>
<td>125 °C/40 °C</td>
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</tr>
<tr>
<td>Connection</td>
<td>4 LEAD WYE</td>
<td>4 LEAD WYE</td>
<td>4 LEAD WYE</td>
</tr>
</tbody>
</table>

** Prime technical data is for an exhaust-optimized prime unit.

Certifications and standards

— Emissions
  • TA-Luft certified
— Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
— Seismic certification – optional
  • IBC certification
  • OSHPD pre-approval
— Performance Assurance Certification (PAC)
  • Generator set tested to ISO 8528-5 for transient response
  • Verified product design, quality, and performance integrity
  • All engine systems are prototype and factory tested
— Power rating
  • Accepts rated load in one step per NFPA 110
  • Permissible average power output during 24 hours of operation is approved up to 75%.
Standard features *

- MTU is a single source supplier
- Global product support
- 2 year standard warranty
- 10V1600 diesel engine
  - 17.5 Liter displacement
  - Common rail fuel injection
  - 4-cycle
- Engine-generator resilient mounted
- Complete range of accessories
- Cooling system
  - Integral set-mounted
  - Engine-driven fan
- 10V1600 D5500 (450 kVA) - Prime - Exhaust Opt / 02

Standard equipment *

Engine
- Air cleaners
- Oil pump
- Oil drain extension and S/O valve
- Full flow oil filter
- Closed crankcase ventilation
- Jacket water pump
- Thermostats
- Blower fan and fan drive
- Radiator - unit mounted
- Electric starting motor - 24V
- Governor - electronic isochronous
- Base - formed steel
- SAE flywheel and bell housing
- Charging alternator - 24V
- Battery box and cables
- Flexible fuel connectors
- Flexible exhaust connection
- TA-Luft compliant engine

Generator
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
- Self-ventilated and drip-proof
- Superior voltage waveform
- Digital, solid state, volts-per-hertz regulator
- No load to full load regulation
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- 125 °C maximum prime temperature rise
- 1-bearing, sealed
- Flexible coupling
- Full amortisseur windings
- 125% rotor balancing
- 3-phase voltage sensing
- ±0.25% voltage regulation
- 100% of rated load - one step
- 5% maximum total harmonic distortion

Generator
- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- CANBus ECU communications
- Windows®-based software
- Multilingual capability
- Remote communications to RDP-110 remote annunciator
- Programmable input and output contacts
- UL recognized, CSA certified, CE approved
- Event recording
- IP 54 front panel rating with integrated gasket
- NFPA 110 compatible
Application data

**Engine**
- Manufacturer: MTU
- Model: 10V1600G10F
- Type: 4-cycle
- Arrangement: 10-V
- Displacement (cu in): 17.5 (1,068)
- Bore (cm): 12.2 (4.8)
- Stroke (cm): 15 (5.91)
- Compression ratio: 17.5:1
- Rated rpm: 1,500
- Engine governor: electronic isochronous (ADEC)
- Maximum power: kW (bhp): 407 (546)
- Speed regulation: ± 0.25%
- Air cleaner: dry
- Cooling: radiator system
  - Ambient capacity of radiator: °C (°F): 50 (122)
  - Maximum restriction of cooling air: intake and discharge side: kPa (in. H₂O): 0.2 (0.8)
  - Heat rejection to coolant: kW (BTU): 206 (11,715)
  - Heat rejection to after cooler: kW (BTUM): 83 (4,720)
  - Heat radiated to ambient: kW (BTUM): 48.1 (2,735)
- Liquid capacity (Lubrication)
  - Total oil system: L (gal): 61 (16)
  - Engine jacket water capacity: L (gal): 60 (15.9)
  - System coolant capacity: L (gal): 99.3 (26.2)
- Electrical
  - Electric volts DC: 24
  - Cold cranking amps under -17.8 °C (0 °F): 1,050
- Fuel system
  - Fuel supply connection size: -10 JIC 37° female
  - M20 x 1.5 male adapter provided
  - Fuel return connection size: -6 JIC 37° female
  - M14 x 1.5 male adapter provided
  - Maximum fuel lift: m (ft): 5 (16)
  - Recommended fuel: diesel #2
  - Total fuel flow: L/hr (gal/hr): 340.7 (90)

**Fuel consumption**
- At 100% of power rating: L/hr (gal/hr): 100 (26.5)
- At 75% of power rating: L/hr (gal/hr): 77 (20.3)
- At 50% of power rating: L/hr (gal/hr): 53 (13.9)

**Air requirements**
- Aspirating: m³/min (SCFM): 28 (975)
- Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of 25 °F rise: m³/min (SCFM): 174.7 (6,169)

**Exhaust system**
- Gas temp. (stack): °C (°F): 548 (1,018)
- Gas volume at stack temp: m³/min (CFM): 86 (3,051)
- Maximum allowable back pressure at outlet of engine, before piping: kPa (in. H₂O): 8.5 (34.1)

**Liquid capacity (Lubrication)**
- Total oil system: L (gal): 61 (16)
- Engine jacket water capacity: L (gal): 60 (15.9)
- System coolant capacity: L (gal): 99.3 (26.2)

**Electrical**
- Electric volts DC: 24
- Cold cranking amps under -17.8 °C (0 °F): 1,050

**Fuel supply connection size**
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**Fuel return connection size**
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**Maximum fuel lift:** m (ft) 5 (16)

**Recommended fuel**
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**Prime technical data is for an exhaust-optimized prime unit.**
Weights and dimensions

<table>
<thead>
<tr>
<th>System</th>
<th>Dimensions (L x W x H)</th>
<th>Weight (dry/less tank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open power unit (OPU)</td>
<td>3,416 x 1,873 x 2,032 mm (134.5 x 73.8 x 80 in)</td>
<td>4,175-5,129 kg (9,205-11,308 lb)</td>
</tr>
</tbody>
</table>

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific generator set.

Sound data

<table>
<thead>
<tr>
<th>Unit type</th>
<th>Prime full load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 0:</td>
<td>88.2 dB(A)</td>
</tr>
</tbody>
</table>

Sound data is provided at 7 m (23 ft). Generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

Emissions data

<table>
<thead>
<tr>
<th>NOₓ + NMHC</th>
<th>CO</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/F</td>
<td>C/F</td>
<td>C/F</td>
</tr>
</tbody>
</table>

C/F = Consult Factory/MTU Distributor
N/A = Not Available

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, and AS 2789. Average load factor: ≤ 75%.
- Consult your local MTU Distributor for derating information.