

DIESEL GENERATOR SET

MTU 12V2000 DS825

PRIME POWER FOR STATIONARY EMERGENCY: 750 KVA

380V - 415V/50 Hz/Air Charge Air Cooling



Optional equipment and finishing shown. Standard may vary.

PRODUCT HIGHLIGHTS

// Benefits

- Low fuel consumption
- Optimized system integration ability
- High reliability and availability of power
- Long maintenance intervals
- Optimized ratio between size and power
- Wide operating range without derating

// MTU Onsite Energy is a single-source supplier

// Global product support

// Standards

- Genset protection class IP23
- Engine-generator set is designed and manufactured in facilities certified to standards ISO 2008:9001 and ISO 2004:14001
- Generator set complies to G3 according to ISO 8528
- Generator meets NEMA MG1, BS5000, ISO, DIN EN and IEC standards
- NFPA 110

// Emissions

- Fuel consumption optimized
- TA-Luft, Tier 2 compliant and NEA (ORDE) optimization optionally available

// Power Rating

- System rating: 750 kVA
- Accepts rated load in one step per NFPA 110
- Generator set complies to G3 according to ISO 8528-5
- Generator set exceeds load steps according to ISO 8528-5

// Performance Assurance Certification (PAC)

- Engine-generator set tested to ISO 8528-5 for transient response
- 85% load factor
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Complete range of accessories available

- Control panel
- Circuit breaker/power distribution
- Fuel system
- Fuel connections with shut-off valve mounted to base frame
- Starting/charging system
- Exhaust system
- Mechanical radiator

// Certifications (option)

- CE certification or German Grid Code Certification (BDEW)

APPLICATION DATA^①

// Engine

		Fuel consumption optimized	Emission optimized ^②
Manufacturer		MTU	MTU
Model		12V2000G16F	12V2000G16F
Type		4-cycle	4-cycle
Arrangement		12V	12V
Displacement:	l	26.8	26.8
Bore:	mm	135	135
Stroke:	mm	156	156
Compression ratio		17.5	17.5
Rated speed:	rpm	1500	1500
Engine governor		ADEC	ADEC
Speed regulation		± 0.25%	± 0.25%
Max power:	kWm	665	665
Mean effective pressure:	bar	19.9	19.9
Air cleaner		Dry	Dry

// Fuel System

Maximum fuel lift:	m	5	5
Total fuel flow:	l/min	30	30

// Fuel Consumption^③

At 100% of power rating:	l/hr	152.2	158.6
At 75% of power rating:	l/hr	116.6	122.0
At 50% of power rating:	l/hr	82.1	85.3

// Lube oil system

Total oil system capacity:	l	80	80
Max. lube oil temperature (alarm):	°C	103	103
Max. lube oil temperature (shutdown):	°C	105	105
Min. lube oil pressure (alarm):	bar	4.5	4.5
Min. lube oil pressure (shutdown):	bar	4	4

// Combustion Air Requirements

Combustion air volume:	m³/s	0.74	0.81
Max. air intake restriction:	mbar	40	40

① All data refers only to the engine and is based on ISO standard conditions (25°C and 100m above sea level).

② Emission optimized data refer to TA-Luft optimized and NEA (ORDE) optimized/Tier 2 compliant engines.

③ Values referenced are in accordance with ISO 3046-1. Conversion calculated with fuel density of 0.83 g/ml.

All fuel consumption values refer to rated engine power.

APPLICATION DATA^①

// Cooling/Radiator System

		Fuel consumption optimized	Emission optimized ^②
Coolant flow rate (HT circuit):	m ³ /h	31.6	31.6
Heat rejection to coolant:	kW	280	280
Heat rejection to charge air:	kW	105	130
Heat radiated to ambient:	kW	35	35
Fan power for mech. radiator (40°C):	kWm	34	34
Fan power for mech. radiator (50°C):	kWm	51.1	51.1
Air flow required for mech. radiator (40°C) cooled unit:	m ³ /min	969	969
Air flow required for mech. radiator (50°C) cooled unit:	m ³ /min	1328	1328
Engine coolant capacity (without cooling equipment):	l	63	63
Radiator coolant capacity (40°C):	l	59	59
Radiator coolant capacity (50°C):	l	140	140
Max. coolant temperature (warning):	°C	102	102
Max. coolant temperature (shutdown):	°C	105	105

// Exhaust System

Exhaust gas temp. (after turbocharger):	°C	550	535
Exhaust gas volume:	m ³ /s	2.05	2.2
Maximum allowable back pressure:	mbar	50	50
Minimum allowable back pressure:	mbar	30	30

// Generator

Protection class	IP2x	IP2x
Insulation class	H	H
Voltage regulation (steady state)	± 0.25%	± 0.25%
Rado interference class	N	N

① All data refers only to the engine and is based on ISO standard conditions (25°C and 100m above sea level).

② Emission optimized data refer to TA-Luft optimized and NEA (ORDE) optimized/Tier 2 compliant engines.

STANDARD AND OPTIONAL FEATURES

// System Ratings (kW/kVA)

Generator model	Voltage	with mechanical radiator		
		kWeI	kVA*	AMPS
Basic: Marathon 575RSL7180	380 V	600	750	1140
Advanced: Marathon 575RSL7181	400 V	600	750	1083
(Low voltage Marathon standard)	415 V	600	750	1043
Basic: Marathon 740RSL7182	380 V	600	750	1140
Advanced: Marathon 740RSL7183	400 V	600	750	1083
(Low voltage Marathon oversized)	415 V	600	750	1043
Leroy Somer LSA 49.1 L11	380 V	600	750	1140
(Low voltage Leroy Somer)	400 V	600	750	1083
	415 V	600	750	1043
Leroy Somer LSA 50.2 M6	380 V	600	750	1140
(Low voltage Leroy Somer oversized)	400 V	600	750	1083
	415 V	600	750	1043

* cos phi = 0,8

// Engine

- 4-Cycle
- Standard single stage air filter
- Oil drain extension & shut-off valve
- Full flow oil filters
- Closed crankcase ventilation
- ADEC electronic isochronous engine governor
- Common rail fuel injection
- Dry exhaust manifold
- Electric starting motor (24V)
- Fuel consumption optimized engine
- TA-Luft optimized engine
- Tier 2 optimized engine
- NEA (ORDE) optimized engine

// Generator

- NEMA MG1, BS5000, ISO, DIN EN and IEC standards
- Self-ventilated
- Superior voltage waveform
- Solid state, volts-per-Hertz regulator
- Ingress protection IP2x
- 3 phase voltage sensing
- 3% maximum harmonic content
- 2/3 pitch stator windings
- No load to full load regulation
- ±0.25% voltage regulation no load to full load
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- Sustained short circuit current of up to 300% of the rated Prime Power/Continuous Power current for up to 10 seconds (Marathon Generators)
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (Leroy Somer Generators)
- Marathon low voltage generator
- Leroy Somer generator
- Oversized generator

■ Represents standard features

□ Represents optional features

STANDARD AND OPTIONAL FEATURES, CONTINUATION

// Cooling System

- | | |
|--|---|
| <input checked="" type="checkbox"/> Jacket water pump | <input checked="" type="checkbox"/> Mechanical radiator |
| <input checked="" type="checkbox"/> Thermostat(s) | <input type="checkbox"/> Jacket water heater |
| <input checked="" type="checkbox"/> Air charge air cooling | |

// Control Panel

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Pre-wired control cabinet for easy application of customized controller (V1+) | <input type="checkbox"/> Basler controller | <input type="checkbox"/> Different expansion modules |
| <input type="checkbox"/> Island operation (V2) | <input type="checkbox"/> Deif controller | <input type="checkbox"/> Remote annunciator |
| <input type="checkbox"/> Automatic mains failure operation with ATS (V3a) | <input checked="" type="checkbox"/> Complete system metering | <input type="checkbox"/> Daytank control |
| <input type="checkbox"/> Automatic mains failure operation incl. control of generator and mains breaker (V3b) | <input checked="" type="checkbox"/> Digital metering | <input type="checkbox"/> Generator winding temperature monitoring |
| <input type="checkbox"/> Island parallel operation of multiple gensets (V4) | <input checked="" type="checkbox"/> Engine parameters | <input type="checkbox"/> Generator bearing temperature monitoring |
| <input type="checkbox"/> Automatic mains failure operation with short (< 10s) mains parallel overlap synchronization (V5) | <input checked="" type="checkbox"/> Generator protection functions | <input type="checkbox"/> Differential protection with multi-function protection relay |
| <input type="checkbox"/> Mains parallel operation of a single genset (V6) | <input checked="" type="checkbox"/> Engine protection | <input type="checkbox"/> Modbus RTU-TCP gateway |
| <input type="checkbox"/> Mains parallel operation of multiple gensets (V7) | <input checked="" type="checkbox"/> SAE J1939 engine ECU communications | |
| | <input checked="" type="checkbox"/> Parametrization software | |
| | <input checked="" type="checkbox"/> Multilingual capability | |
| | <input checked="" type="checkbox"/> Multiple programmable contact inputs | |
| | <input checked="" type="checkbox"/> Multiple contact outputs | |
| | <input checked="" type="checkbox"/> Event recording | |
| | <input checked="" type="checkbox"/> IP 54 front panel rating with integrated gasket | |

// Circuit Breaker/Power Distribution

- | | | |
|---|--|---|
| <input type="checkbox"/> 3-pole circuit breaker | <input type="checkbox"/> Manual-actuated circuit breaker | <input type="checkbox"/> Base frame mounted circuit breaker |
| <input type="checkbox"/> 4-pole circuit breaker | <input type="checkbox"/> Electrical-actuated circuit breaker | <input type="checkbox"/> Stand-alone circuit breaker in separate switch box |

// Fuel System

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Flexible fuel connectors mounted to base frame | <input type="checkbox"/> Fuel cooler |
| <input type="checkbox"/> Fuel filter with water separator | |
| <input type="checkbox"/> Switchable fuel filter with water separator | |

STANDARD AND OPTIONAL FEATURES, CONTINUATION

// Starting/Charging System

- | | |
|---|--|
| <input checked="" type="checkbox"/> 24V starter | <input type="checkbox"/> Battery charger |
| <input type="checkbox"/> Starter batteries | <input type="checkbox"/> Redundant starter |

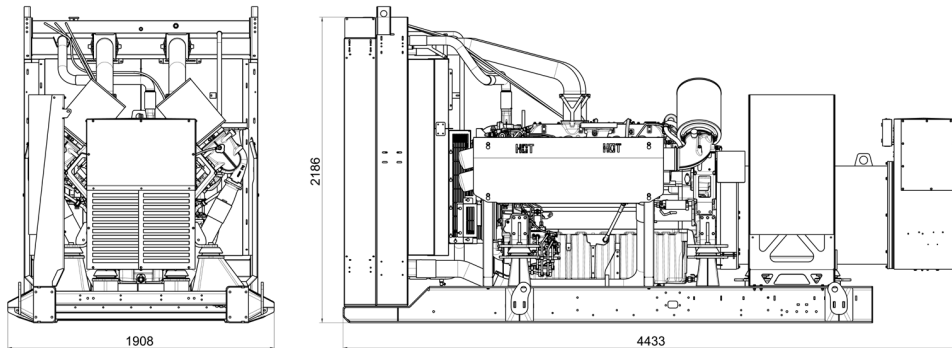
// Mounting System

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Welded base frame | <input checked="" type="checkbox"/> Resilient engine and generator mounting | <input checked="" type="checkbox"/> Modular base frame design |
|---|---|---|

// Exhaust System

- | | |
|---|---|
| <input type="checkbox"/> Exhaust bellows with connection flange | <input type="checkbox"/> Exhaust silencer with 40 dB(A) sound attenuation |
| <input type="checkbox"/> Exhaust silencer with 10 dB(A) sound attenuation | <input type="checkbox"/> Y-connection-pipe |
| <input type="checkbox"/> Exhaust silencer with 30 dB(A) sound attenuation | |

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on a 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.

System	Dimensions (LxWxH)	Weight (dry/less tank)
Open Power Unit (OPU)	4440 x 1910 x 2190 mm	6260 kg

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

SOUND DATA

// Consult your local MTU Onsite Energy distributor for sound data.

EMISSIONS DATA

// Consult your local MTU Onsite Energy distributor for emissions data.

RATING DEFINITIONS AND CONDITIONS

- // Standby Power 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. 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: $\leq 85\%$. Operating hours/year: max. 500.
- // Consult your local MTU Onsite Energy Power Generation Distributor for derating information.

Materials and specifications subject to change without notice.