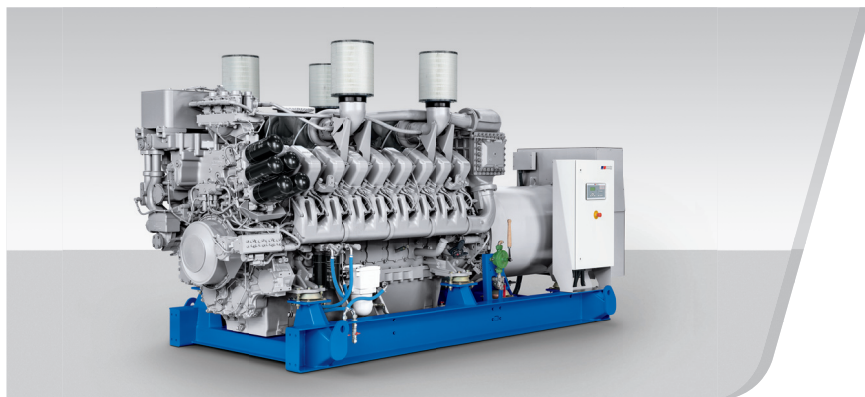


DIESEL GENERATOR SET DP02000D5S

380V – 11 kV/50 Hz/Prime/TA-Luft Optimized
MTU 16V4000G23/Water Charge Air Cooling



Optional equipment and finishing shown. Standard may vary.

PRODUCT HIGHLIGHTS

// Benefits

- Low fuel consumption
- Optimized system integration ability
- High reliability
- High availability of power
- Long maintenance intervals

// MTU Onsite Energy is a single-source supplier

// Support

- Global product support offered

// Standards

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

// Power Rating

- System ratings: 2000 kVA - 2100 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
- 75% 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 and electrical driven radiators
- Medium voltage alternators

// Emissions

- TA-Luft optimized

// Certifications

- CE certification option

APPLICATION DATA^①

// Engine

Manufacturer	MTU
Model	16V4000G23
Type	4-cycle
Arrangement	16V
Displacement: l	76.3
Bore: mm	170
Stroke: mm	210
Compression ratio	16.4
Rated speed: rpm	1500
Engine governor	ADEC (ECU 7)
Max power: kWm	1798
Air cleaner	Dry

// Fuel System

Maximum fuel lift: m	5
Total fuel flow: l/min	20

// Fuel Consumption^②

	l/hr	g/kwh
At 100% of power rating:	472.2	218
At 75% of power rating:	346.1	213
At 50% of power rating:	234	216

// Liquid Capacity (Lubrication)

Total oil system capacity: l	300
Engine jacket water capacity: l	175
System coolant capacity: l	50

// Combustion Air Requirements

Combustion air volume: m ³ /s	3.2
Max. air intake restriction: mbar	50

// Cooling/Radiator System

Coolant flow rate (HT circuit): m ³ /h	68.5
Coolant flow rate (LT circuit): m ³ /h	30
Heat rejection to coolant: kW	790
Heat radiated to charge air cooling: kW	460
Heat radiated to ambient: kW	90
Fan power for mech. radiator (40°C): kWm	70

// Exhaust System

Exhaust gas temp. (after turbocharger): °C	480
Exhaust gas volume: m ³ /s	7.4
Maximum allowable back pressure: mbar	85
Minimum allowable back pressure: mbar	30

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

② 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.

STANDARD AND OPTIONAL FEATURES

// System Ratings (kW/kVA)

Generator model	Voltage	TA-Luft optimized 40°C/400m								
		without radiator			with mechanical radiator			with electr. driven radiator		
		kWel*	kVA**	AMPS	kWel*	kVA**	AMPS	kWel*	kVA*	AMPS
Marathon 744RSL7092 (Low voltage marathon standard)	380 V	1680	2100	3191	1600	2000	3039	1600	2000	3039
	400 V	1680	2100	3031	1600	2000	2887	1600	2000	2887
	415 V	1680	2100	2922	1600	2000	2782	1600	2000	2782
Marathon 1020FDL7093 (Low voltage marathon oversized)	380 V	1680	2100	3191	1600	2000	3039	1600	2000	3039
	400 V	1680	2100	3031	1600	2000	2887	1600	2000	2887
	415 V	1680	2100	2922	1600	2000	2782	1600	2000	2782
Marathon 1020FDH7097 (Medium volt. marathon)	11 kV	1680	2100	110	1600	2000	105	1600	2000	105

* cos phi = 1,0

** cos phi = 0,8

// Engine

- 4-Cycle
- Standard single stage air filter
- Oil drain extension & shut-off valve
- Closed crankcase ventilation
- Governor-electronic isochronous
- Common rail fuel injection
- TA-Luft optimized engine

// Generator

- NEMA MG1, BS5000, ISO, DIN EN and IEC standards
- Self-ventilated
- Superior voltage waveform
- Solid state, volts-per-Hertz regulator
- 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 250% of the rated current for up to 10 seconds (marathon generator)
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (Leroy Somer generator)
- Marathon low voltage generator
- Leroy Somer generator (please contact your local MTU Onsite Energy distribution partner for system ratings)
- Oversized generator
- Medium voltage generator

// Cooling System

- Jacket water pump
- Thermostat(s)
- Water charge air cooling
- Mechanical radiator
- Electrical driven front-end cooler
- Jacket water heater

Represents standard features

Represents optional features

STANDARD AND OPTIONAL FEATURES, CONTINUATION

// Control Panel

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> ■ Pre-wired control cabinet for easy application of customized controller (V1+) <input type="checkbox"/> Island operation (V2) <input type="checkbox"/> Automatic mains failure operation with ATS (V3a) <input type="checkbox"/> Automatic mains failure operation incl. control of generator and mains breaker (V3b) <input type="checkbox"/> Island parallel operation of multiple gensets (V4) <input type="checkbox"/> Automatic mains failure operation with short (< 10s) mains parallel overlap synchronization (V5) <input type="checkbox"/> Mains parallel operation of a single genset (V6) <input type="checkbox"/> Mains parallel operation of multiple gensets (V7) | <ul style="list-style-type: none"> <input type="checkbox"/> Basler controller <input type="checkbox"/> Deif controller ■ Complete system metering ■ Digital metering ■ Engine parameters ■ Generator Protection Functions ■ Engine protection ■ SAE J1939 engine ECU communications ■ Parametrization software ■ Multilingual capability ■ Multiple programmable contact inputs ■ Multiple contact outputs ■ Event recording ■ IP 54 front panel rating with integrated gasket | <ul style="list-style-type: none"> <input type="checkbox"/> Different expansion modules <input type="checkbox"/> Remote annunciator <input type="checkbox"/> Daytank control <input type="checkbox"/> Generator winding temperature monitoring <input type="checkbox"/> Generator bearing temperature monitoring <input type="checkbox"/> Differential protection with multi-function protection relay <input type="checkbox"/> Modbus RTU-TCP gateway |
|---|--|---|

// Circuit Breaker/Power Distribution

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> 3-pole circuit breaker <input type="checkbox"/> 4-pole circuit breaker | <ul style="list-style-type: none"> <input type="checkbox"/> Manual-actuated circuit breaker <input type="checkbox"/> Electrical-actuated circuit breaker | <ul style="list-style-type: none"> <input type="checkbox"/> Stand-alone solution in separate switch box |
|--|--|--|

// Fuel System

- | | |
|---|---|
| <ul style="list-style-type: none"> ■ Flexible fuel connectors mounted to base frame <input type="checkbox"/> Fuel filter with water separator <input type="checkbox"/> Switchable fuel filter with water separator | <ul style="list-style-type: none"> <input type="checkbox"/> Seperate fuel cooler <input type="checkbox"/> Fuel cooler integrated into cooling equipment |
|---|---|

// Starting/Charging System

- | | |
|---|--|
| <ul style="list-style-type: none"> ■ 24V starter <input type="checkbox"/> Starter batteries | <ul style="list-style-type: none"> <input type="checkbox"/> Battery rack & cables <input type="checkbox"/> Battery charger |
|---|--|

STANDARD AND OPTIONAL FEATURES, CONTINUATION

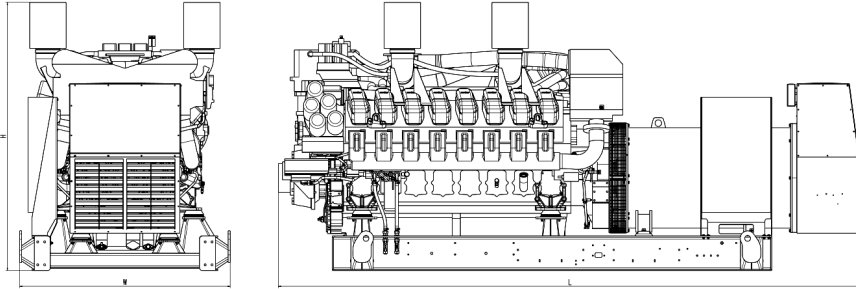
// Mounting System

- Welded base frame
- Resilient engine and generator mounting
- Modular base frame design

// Exhaust System

- Exhaust bellows with connection flange
- Exhaust silencer with 10 dB(A) sound attenuation
- Exhaust silencer with 30 dB(A) sound attenuation
- Exhaust silencer with 40 dB(A) sound attenuation
- Y-connection-pipe

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

Open Power Unit (OPU)

Dimensions (L x W x H)

5090 x 1836 x 2330 mm

Weight (dry/less tank)

12893 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

NO_x + NMHC

1700

CO

300

PM

50

All units are in mg/Nm³

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided refers to ISO standard ambient conditions (25°C and 100m above sea level). The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation.

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%.

// Deration factor:

Altitude: Consult your local MTU Onsite Energy Power Generation distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation distributor for temperature derations.

Rated power is available up to 40°C and 400m above sea level.

Materials and specifications subject to change without notice.

MTU Onsite Energy

A Rolls-Royce Power Systems Brand

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