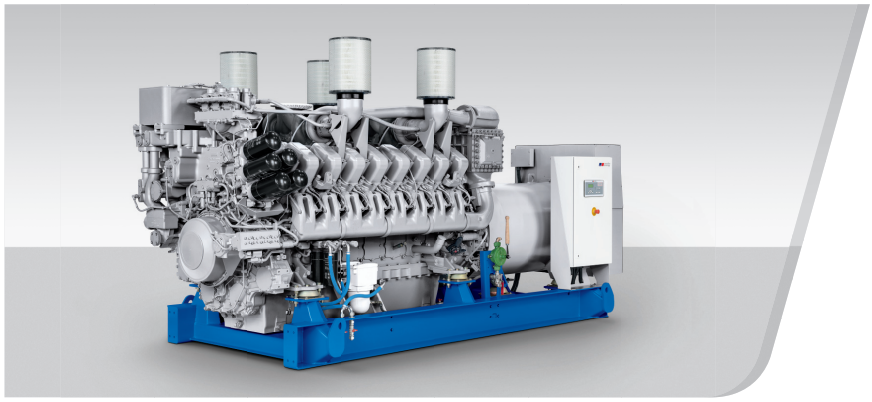
DIESEL GENERATOR SET
DP02000D5S

380V – 11 kV/50 Hz/Prime/NEA (ORDE) Optimized
MTU 16V4000G23/Water Charge Air Cooling



Optional equipment and finishing shown. Standard may vary.

PRODUCT HIGHLIGHTS

// **Benefits**
- Low fuel consumtion
- 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: 2050 kVA - 2150 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**
- NEA (ORDE) optimized

// **Certifications**
- CE certification option

APPLICATION DATA①

// 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
Max power: kWm	1798
Air cleaner	Dry

// Fuel System

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

// Fuel Consumption②

	l/hr	g/kwh
At 100% of power rating:	433.3	200
At 75% of power rating:	331.4	204
At 50% of power rating:	229.6	212

// 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	2.4
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	610
Heat radiated to charge air cooling: kW	370
Heat radiated to ambient: kW	90
Fan power for mech. radiator (40°C): kWm	70

// Exhaust System

Exhaust gas temp. (after turbocharger): °C	475
Exhaust gas volume: m^3/s	6.2
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	NEA (ORDE) optimized 40°C/100m								
		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	1640	2050	3115	1640	2050	3115
	400 V	1680	2100	3031	1640	2050	2959	1640	2050	2959
	415 V	1680	2100	2922	1600	2000	2782	1600	2000	2782
Marathon 1020FDL7093 (Low voltage marathon oversized)	380 V	1680	2100	3191	1640	2050	3115	1640	2050	3115
	400 V	1680	2100	3031	1640	2050	2959	1640	2050	2959
	415 V	1680	2100	2922	1600	2000	2782	1600	2000	2782
Leroy Somer LSA 51.2 VL90 (Low voltage Leroy Somer)	380 V	1720	2150	3267	1680	2100	3191	1680	2100	3191
	400 V	1720	2150	3103	1680	2100	3031	1680	2100	3031
	415 V	1720	2150	2991	1680	2100	2922	1680	2100	2922
Marathon 1020FDH7097 (Medium volt. marathon)	11 kV	1680	2100	110	1640	2050	108	1640	2050	108
Leroy Somer LSA 53.1 UL85 (Medium volt. Leroy Somer)	11 kV	1720	2150	113	1640	2050	108	1640	2050	108

* 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
- ■ 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
- ■ 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

- ■ Pre-wired control cabinet for easy application of customized controller (V1+)
- ☐ Island operation (V2)
- ☐ Automatic mains failure operation with ATS (V3a)
- ☐ Automatic mains failure operation incl. control of generator and mains breaker (V3b)
- ☐ Island parallel operation of multiple gensets (V4)
- ☐ Automatic mains failure operation with short (< 10s) mains parallel overlap synchronization (V5)
- ☐ Mains parallel operation of a single genset (V6)
- ☐ Mains parallel operation of multiple gensets (V7)
- ☐ Basler controller
- ☐ 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
- ☐ Different expansion modules
- ☐ Remote annunciator
- ☐ Daytank control
- ☐ Generator winding temperature monitoring
- ☐ Generator bearing temperature monitoring
- ☐ Differential protection with multi-finction protection relay
- ☐ Modbus RTU-TCP gateway

// Circuit Breaker/Power Distribution

- ☐ 3-pole circuit breaker
- ☐ 4-pole circuit breaker
- ☐ Manual-actuated circuit breaker
- ☐ Electrical-actuated circuit breaker
- ☐ Stand-alone solution in seperate switch box

// Fuel System

- ■ Flexible fuel connectors mounted to base frame
- ☐ Fuel filter with water separator
- ☐ Switchable fuel filter with water separator
- ☐ Seperate fuel cooler
- ☐ Fuel cooler integrated into cooling equipment

// Starting/Charging System

- ■ 24V starter
- ☐ Starter batteries
- ☐ Battery rack & cables
- ☐ Battery charger

■ Represents standard features ☐ Represents optional features

STANDARD AND OPTIONAL FEATURES, CONTINUATION

// Mounting System

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

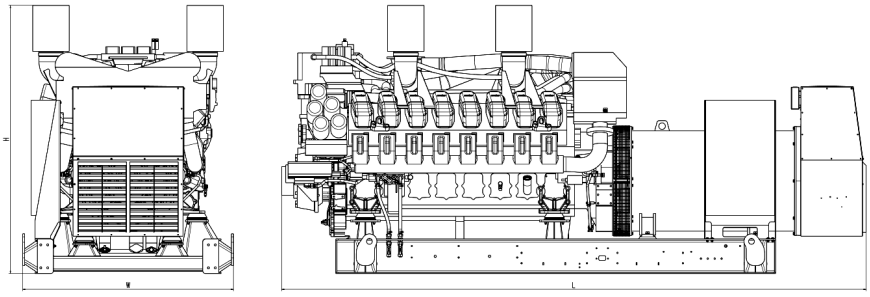
// Exhaust System

- ☐ 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

■ Represents standard features

☐ Represents optional features

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based an 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 (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	5090 x 1836 x 2330 mm	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

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

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 100m above sea level.

Subject to change. | 3237751 | Edition 01/14 | ENC 2014-03.

Materials and specifications subject to change without notice.