

Commercial Marine

mtu MARINE GENERATOR SETS WITH SERIES 2000 AND 4000 ENGINES



A Rolls-Royce
solution

GENERATING POWER

The modular design **mtu** diesel generator sets enable easy configuration for every need and ensures prompt delivery. Shortened project time frames are also made possible by our global network of partners and distributors who provide complete genset solutions backed by our factory engineers.

We offer a complete portfolio of marine diesel generator sets for auxiliary and emergency power supply as well as diesel-electric propulsion on the high seas – now with an extended power range of 675 – 3,100 kWe. Available as 50/60 Hz as well as variable-speed versions, our gensets feature numerous options and accessories, specialized mountings, control panels and PTOs for firefighting pump drives. In addition to pre-engineered standardized gensets, we also offer fully customized solutions for wide-ranging applications and very specific individual requirements.

Well known in the market for their high uptime and long times between overhaul (TBO) of up to 46,000 hours, **mtu** marine diesel gensets are specifically designed to ensure economical operation and reliable performance. As a system supplier specializing in generator sets and automation systems with extensive configuration, installation and maintenance experience, we are able to offer customers optimized turnaround times backed by the support of a global network of service partners.

You benefit from:



Systems designed for maximum reliability and availability



Now with an extended power range of 675 – 3,100 kWe



Environmentally friendly engines with reduced emissions



Extensive analyses, risk mitigation services and integrated interfaces



Maximized availability and optimized life-cycle costs with an **mtu** ValueCare Agreement



Investment protection through **mtu**-certified technicians, genuine parts and training

Our variable speed gensets enable maximized operational flexibility while minimizing operating costs. The patented Superior System Controller (SSC) determines the best operating point in the engine performance map in relation to the electrical power demand. And for customers who prefer to use a generator of their choice, we offer a precise simulation and calculation to ensure safe, economical operation.

Benefits

- Less fuel consumption at part load, up to 15%*
- Longer maintenance intervals and up to 20%* lower maintenance costs
- Lower noise signature
- Now with up to 3,100 kWe

Flange-mounted benefits

- Cost-effective solution
- Compact design saves installation space and offers more room for cargo or crew
- Easy service access inside the engine room

Free-standing benefits

- Longest maintenance intervals based on sleeve bearings and maintenance-free, non-aging and heat resistant coupling
- Easy in-vessel serviceability

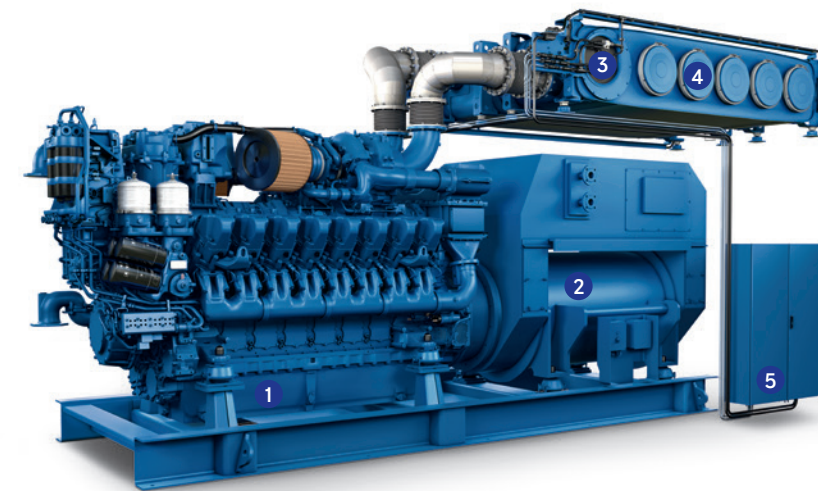
* Can vary significantly depending on project / operation profile (efficiency gain depends on system losses and generator operating curve)

LOW EMISSIONS. MAXIMUM FLEXIBILITY.

Incorporating advanced selective catalytic reduction (SCR) exhaust aftertreatment technology, **mtu** Series 4000 M05 engines are IMO Tier III certified to meet all relevant local emissions and environmental standards.

Knowing that installation space inside engine rooms is limited, we developed an airless selective catalytic reduction (SCR) solution that is particularly compact and maintenance-friendly. In addition to doors that enable easy access for SCR catalyst replacement, the system features integrated diesel exhaust fluid (DEF) dosing directly in the SCR. By eliminating the need for a separate DEF mixing pipe, it provides tremendous pipework flexibility between the engine and the SCR box. The space needed to fit the exhaust gas aftertreatment is kept to a bare minimum. Ammonia slips are prevented by a closed loop regulated control system.

mtu Series 4000 M05 engines with SCR aftertreatment are certified for IMO Tier III exhaust emissions standards resulting in very low outputs for both NO_x and smoke particulates. They are also very fuel efficient. For many ships operated around the world, especially those of offshore service and supply businesses, SCR technology has shown to be an excellent solution for ensuring the reliability of engines as well as the safety of the vessels and crews. SCR also enables operation with lower fuel quality.



mtu marine generator set configuration example – **mtu** Series 4000 M05 with SCR system

- 1 Diesel engine
- 2 Generator
- 3 Integrated diesel exhaust fluid (DEF) dosing units
- 4 Maintenance doors
- 5 Cabinet with monitoring and control units, DEF pumps

High-powered SCR cubical box



mtu MARINE GENSET PORTFOLIO

60 Hz generator sets, power factor 0.8, dimensions are based on synchronous water cooled IP54 alternators

Engine model	Rated power ICXN	Genset model	Speed range / power			Dimensions [LxWxH]	Weight kg	Emissions certification	
	kW		rpm	kWe	kVA	mm		IMO II	IMO III
8V 4000 M23S	920	MG8V4000M23S	1800	870	1087.5	4300x1825x2000	10500	■	
8V 4000 M33S	1040	MG8V4000M33S	1800	990	1237.5	4300x1825x2000	10500	■	
12V 4000 M23S	1380	MG12V4000M23S	1800	1310	1637.5	4600x1825x2285	14000	■	
12V 4000 M33S	1560	MG12V4000M33S	1800	1480	1850	4600x1825x2285	14500	■	
12V 4000 M35S	1680	MG12V4000M35S (TL)	1800	1610	2012.5	4700x1825x2285	15000	■	
16V 4000 M23S	1840	MG16V4000M23S	1800	1760	2200	5400x1825x2285	17000	■	
12V 4000 M35S	1920	MG12V4000M35S	1800	1840	2300	4900x1825x2285	16000	■	
16V 4000 M33S	2080	MG16V4000M33S	1800	2000	2500	5400x1825x2285	18000	■	■
16V 4000 M43S	2240	MG16V4000M43S	1800	2150	2687.5	5700x1965x2285	18000	■	■
16V 4000 M25S	2240	MG16V4000M25S	1800	2150	2687.5	5700x1965x2285	18000	■	
16V 4000 M35S	2240	MG16V4000M35S (TL)	1800	2150	2687.5	5700x1965x2285	18500		■
16V 4000 M35S	2560	MG16V4000M35S	1800	2460	3075	5700x1965x2285	20000	■	■
20V 4000 M35S	2800	MG20V4000M35S (TL)	1800	2700	3375	6800x1965x2285	25000	■	■
20V 4000 M35S	3200	MG20V4000M35S	1800	3100	3875	6800x1965x2285	25000	■	■
12V 4000 P83	1455	REQ	1800	1400	1750	REQ	REQ	■	
12V 4000 P83	1680	REQ	1800	1610	2012.5	REQ	REQ	■	
16V 4000 P83	1940	REQ	1800	1860	2325	REQ	REQ	■	
16V 4000 P83	2240	REQ	1800	2150	2687.5	REQ	REQ	■	
20V 4000 P83	2425	REQ	1800	2320	2900	REQ	REQ	■	
20V 4000 P83	2800	REQ	1800	2700	3375	REQ	REQ	■	

50 Hz generator sets, power factor 0.8, dimensions are based on synchronous water cooled IP54 alternators

Engine model	Rated power ICXN	Genset model	Speed range / power			Dimensions [LxWxH]	Weight kg	Emissions certification	
	kW		rpm	kWe	kVA	mm		IMO II	IMO III
8V 4000 M23F	760	MG8V4000M23F	1500	720	900	4300x1825x2000	10500	■	
8V 4000 M33F	880	MG8V4000M33F	1500	830	1037.5	4300x1825x2000	10500	■	
12V 4000 M23F	1140	MG12V4000M23F	1500	1080	1350	4600x1825x2000	13500	■	
12V 4000 M33F	1320	MG12V4000M33F	1500	1260	1575	4600x1825x2285	14000	■	
12V 4000 M35F	1380	MG12V4000M35F (TL)	1500	1320	1650	4700x1825x2285	15000	■	■
12V 4000 M35F	1560	MG12V4000M35F	1500	1500	1875	4800x1825x2285	15500	■	■
16V 4000 M23F	1520	MG16V4000M23F	1500	1460	1825	5200x1825x2285	16000	■	
16V 4000 M33F	1760	MG16V4000M33F	1500	1680	2100	5400x1825x2285	17000	■	
16V 4000 M35F	1840	MG16V4000M35F (TL)	1500	1760	2200	5600x1825x2285	17500	■	■
16V 4000 M35F	2080	MG16V4000M35F	1500	2000	2500	5700x1825x2285	18000	■	■
12V 4000 P63	1350	REQ	1500	1300	1625	REQ	REQ	■	
12V 4000 P63	1560	REQ	1500	1500	1875	REQ	REQ	■	
16V 4000 P63	1800	REQ	1500	1720	2150	REQ	REQ	■	
16V 4000 P63	2080	REQ	1500	2000	2500	REQ	REQ	■	
20V 4000 P63	2245	REQ	1500	2150	2687.5	REQ	REQ	■	
20V 4000 P63	2600	REQ	1500	2500	3125	REQ	REQ	■	

Legend: REQ = Available on project specific request

Note: Series 4000 P63/P83 and Series 4000 M25/M35 engines are suitable for radiator cooling
Further constant speed genset models with emission certificates for CN2 / EPA Tier III are available on request

Variable speed generator sets, power factor: 0.95, dimensions are based on synchronous water cooled IP54 alternators

Engine model	Rated power ICXN	Genset model	Speed range / power		Dimensions [LxWxH]	Weight kg	Emissions certification	
	kW		rpm	kWe	mm		IMO II	IMO III
8V 2000 M72	720	MG8V2000M72	1400-2250	675	3500x1500x1680 *	4500	■	
10V 2000 M72	900	MG10V2000M72	1400-2250	850	3800x1500x1680 *	5250	■	
12V 2000 M72	1080	MG12V2000M72	1400-2250	1020	4100x1500x1680 *	6000	■	
16V 2000 M72	1440	MG16V2000M72	1400-2250	1370	4700x1500x1680 *	7500	■	
8V 4000 M63	1000	MG8V4000M63	900-1800	960	4800x2000x2000	12000	■	■
12V 4000 M63	1500	MG12V4000M63	900-1800	1440	5700x2000x2285	18000	■	
12V 4000 M65L	1680	MG12V4000M65L (TL)	900-1800	1610	5700x2000x2285	18000	■	■
12V 4000 M65L	1920	MG12V4000M65L	900-1800	1840	5700x2000x2285	19000	■	■
16V 4000 M63L	2240	MG16V4000M63L	900-1800	2150	6200x2000x2285	22000	■	
16V 4000 M65L	2240	MG16V4000M65L (TL)	900-1800	2150	6200x2000x2285	22000	■	■
16V 4000 M65L	2560	MG16V4000M65L	900-1800	2460	6200x2000x2285	23000	■	■
20V 4000 M65L	2800	MG20V4000M65L (TL)	900-1800	2700	7300x2000x2285	27000	■	■
20V 4000 M65L	3200	MG20V4000M65L	900-1800	3100	7300x2000x2285	27000	■	■

Legend: REQ = Available on project-specific request/ * dimensions are based on air cooled IP23 alternator

Note: Further variable speed genset models with emission certificates for CN2 / EPA Tier III are available on request

mtu NAUTIQ GENOLINE NG

Marine automation – made for onboard power generation plants.
With the **mtu** NautIQ Genoline NG system, your engine and generator set are optimized to work at their best, whatever the operating conditions.

The modular system's design ensures optimum adaptation of the diesel engine and generator set to a variety of operating conditions that exist for onboard power generation. **mtu** NautIQ Genoline NG is available for **mtu** Series 2000 (on request) and Series 4000 engines.

mtu NautIQ Genoline NG is compatible with the following applications

- Diesel-electric propulsion plant non-classified and classified
- Special applications
- MIL
- Shock
- EMC



1



2



3



4

Service solutions

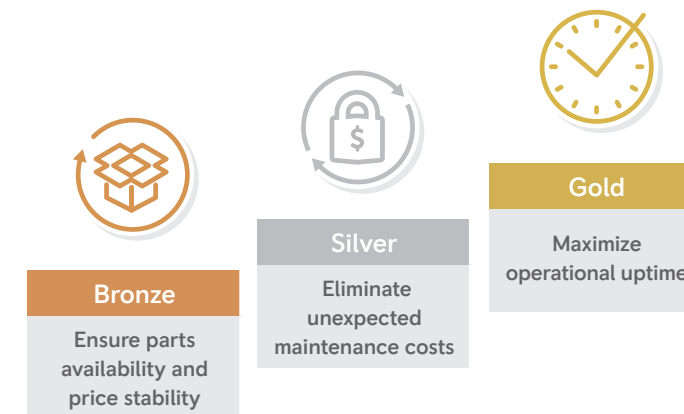
SERVICE SOLUTIONS DESIGNED AROUND YOUR PRIORITIES.

You've got a tough job. Get the power, performance and peace of mind to get it done right with **mtu ValueCare Agreements** – tailored support throughout the life of your equipment.

In your world, every second counts. Our digitally connected propulsion systems, wrapped in ValueCare Agreements, make it easy to keep your business running smoothly and reduce total cost of ownership by maximizing uptime, optimizing lifecycle costs and helping you avoid equipment-related business disruptions through preventive maintenance.

That's why it pays to plan ahead by investing in a superior **mtu** system and protecting it with a ValueCare Agreement.

Tailored solutions to move your business forward:



mtu ValueCare Agreements helps you

- Increase operational uptime
- Guarantee parts availability and service quality
- Predict equipment-related costs
- Optimize maintenance planning
- Connect to us, 24/7
- Attain peace of mind

ALL OF OUR
GENSET ENGINES
 ARE QUALIFIED TO USE
**SUSTAINABLE
 FUELS**
 AS PER EN 15940

1. Ndurance

During her first assignment as a cable layer between the islands of Java and Bali, "Ndurance" carried a 5,000-ton cable drum. The 1,500 kW needed to move the 26-meter-diameter drum were supplied by two 12V 4000 M33S and two 16V 4000 M33S **mtu** marine gensets (60 Hz). (Picture: Boskalis)

3. Dina Polaris

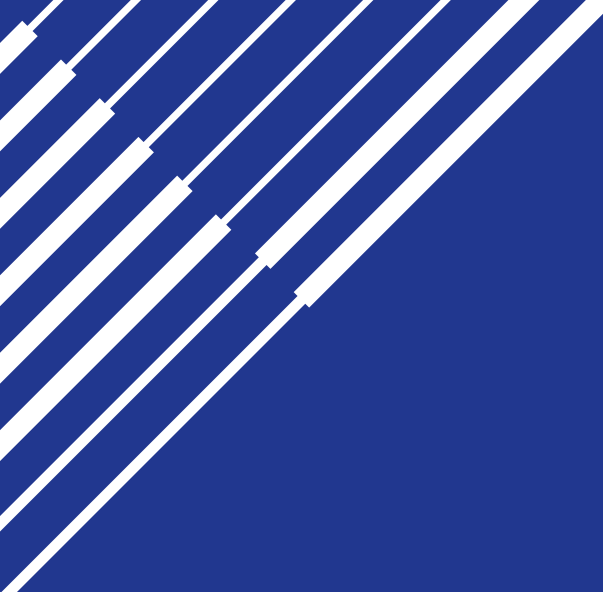
The multipurpose offshore vessel was built in 2017. With a length overall (LOA) of 98.9 meters, a width of 21 meters and a draught of 5.6 meters, the Dina Polaris has a deadweight tonnage of 6,000 tons. The power of 8,960 kW is provided by 4 x **mtu** 16V 4000 M63L with 2,240 kW each and 900 – 1,800 rpm.

2. Edda Mistral and Edda Passat

Equipped with four variable speed 30 – 60 Hz **mtu** gensets delivering 2,150 kW each, two 81-meter offshore wind service operation vessels, the "Edda Mistral" and the "Edda Passat," provide highly reliable support off the coast of UK.

4. Starnav

The Starnav Ursus is one of 14 offshore supply vessels operated by Starnav Servicos Maritimos Ltda. The vessels, which are 90 meters long, 19 meters wide and have a DWT of 4,700 tons, are each powered by 4 x **mtu** marine gensets Series 16V 4000 M33S. Each genset has a power output of 2,080 kW at 1,800 rpm.



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