

## Marine Defense

Gendrive  
6R 1600 M20



*Power. Passion. Partnership.*

# MTU 6R 1600 M20 (250 – 300 kWe)

Robust, emission friendly and military qualified: Setting yet another benchmark, the MTU 6R 1600 M20 offers the benefit of having an on-board auxiliary power generation plant in conjunction with proven MTU propulsion systems.

MTU's commitment and heritage is to provide dedicated products fulfilling the special requirements of the naval and governmental applications. With maximum availability and reliability, long maintenance intervals and technical characteristics designed specifically for those applications, MTU's 6R 1600 M20 engine completes MTU's Marine Genset portfolio (5 - 3.000 kWe) in the range 250 – 300 kWe.

You can rely on MTU as a systems supplier, fulfilling all your requirements. In addition to main propulsion engines this includes on-board power generation as well as factory after market support programs enabling you to be supported from one source.

A sensitive approach towards emissions and environmental protection is always a priority. The MTU 6R 1600 M20 meets IMO Tier II and EPA Tier 3C emission regulations.

## MTU 6R 1600 M20 – your advantages:

### Proven design

The MTU 6R 1600 M20 is a development of our proven Series 1600, which is successfully operating in numerous industrial applications as well as shore-based power generation even under the most severe conditions. The reliable Series 1600 technology has been optimized and designed for naval requirements in the electrical power range 250 – 300 kWe. Due to the proven and reliable design, the engine is SOLAS certified and has maintenance intervals (TBO) ≥ 15.000 h.

### Tailored to your requirements

The MTU 6R 1600 M20 offers a wide range of options/accessories through its modular design. It allows you to choose from different cooling configurations with or without attached cooling hardware and a range of mounting options to meet basic up to demanding naval requirements.

### Naval qualification

Worldwide naval and governmental customers rely on the state-of-the-art technology. The 6R 1600 M20 has been specifically designed to fulfill all the specific qualifications such as shock (NATO standard BV043/89 and STANAG 4142), acoustic and electro-magnetic compatibility (EMC) as well as specific mine countermeasure requirements.

Furthermore, the LOP has an interface to the shipside automation – whether MTU Callosum or provided by any third party – to meet military specifications.

The MTU 6R 1600 M20 is capable of operating with standard naval fuels such as EN 590, ISO 8217-DMX, ASTM 975, F75, F76.

### Comprehensive support

Our expertise even extends to documentation and logistic support: We provide support and parts in accordance with naval ILS requirements for the life-cycle of naval platforms.

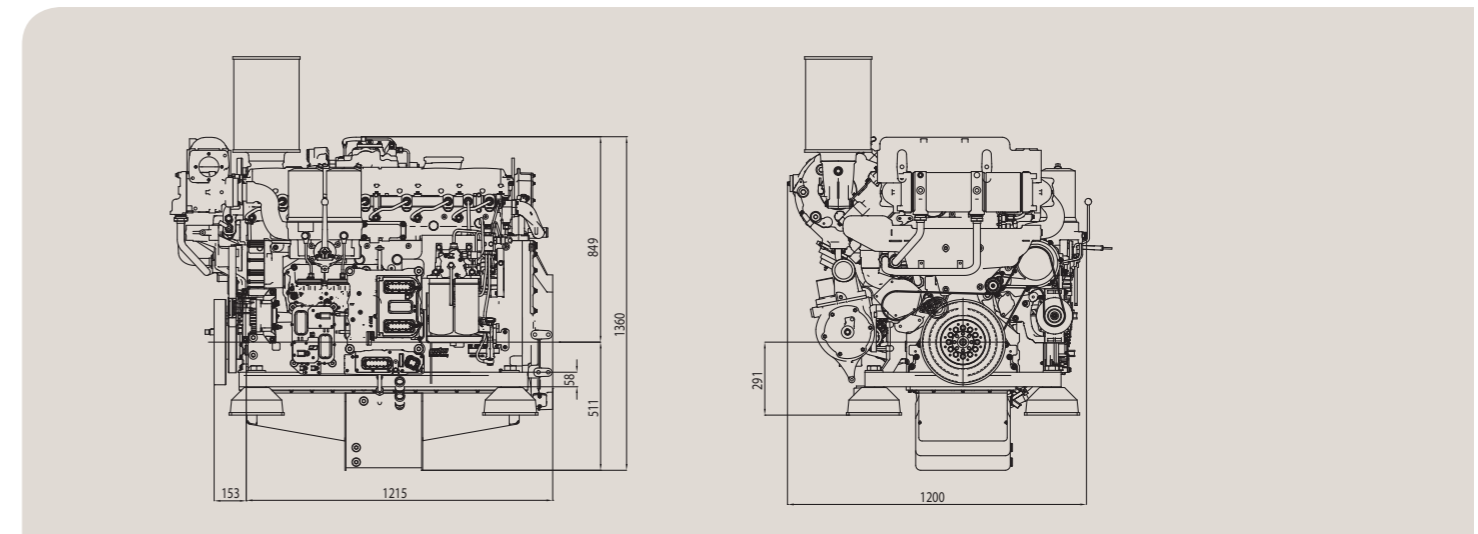
MTU's extensive sales and service network provides swift, skilled and professional service. It doesn't matter where, when or why you need us, we are always nearby and ready to help. Our experienced MTU specialists are your local, reliable partners.

### System solutions

Direct drive and combined propulsion plants including diesel engines, gearboxes, propellers or waterjets, are among the MTU solutions for powering vessels such as patrol ships, mine hunters, SAR boats, oceanographic and research vessels, yachts, and other marine vessels.

As a systems supplier, we can configure the most suitable complete propulsion system for your needs, implementing in your vessel as well MTU 6R 1600 M20 generator sets and MTU automation systems.

All the components – engines, gearboxes, propellers, MTU 6R 1600 M20 generator sets and automation systems – are supplied from a single source and are integrated into a combined system.



## MTU 6R 1600 M20 – Technical Data

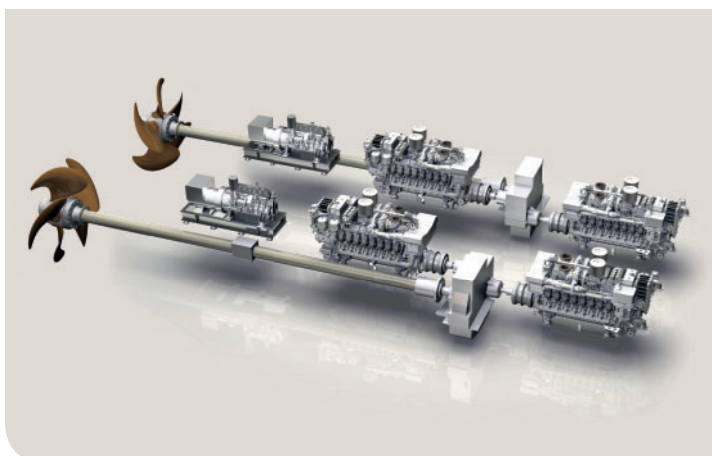
6R 1600	M20F	M20S
	50 Hz	60 Hz
<b>Rated power ICFN</b>	269	323
<b>Electric power <sup>1)</sup></b>	250	300
<b>Speed</b>	1500	1800
<b>Dimensions and Masses</b>		
Length (L)	1556 (61)	1556 (61)
Width (W)	1200 (47)	1200 (47)
Height (H)	1360 (54)	1360 (54)
Mass, dry <sup>2)</sup>	1473 (3247) <sup>2)</sup>	1473 (3247) <sup>2)</sup>
<b>Bore / Stroke</b>	122/150 (4.8/5.9)	122/150 (4.8/5.9)
<b>Displacement, total</b>	10.5 (640)	10.5 (640)
<b>Optimization of exhaust emissions <sup>3)</sup></b>	IMO Tier II	IMO Tier II EPA Tier 3C

<sup>1)</sup> Electric power based on rated power ISO 8528-5 and 93% alternator efficiency

<sup>2)</sup> Depending on scope of supply

<sup>3)</sup> IMO – International Maritime Organization (MARPOL); EPA - U.S. Marine regulation 40 CFR 94

- MTU Engine Control Unit and sensors with interface to ship automation system
- Common rail fuel injection system
- Cooling system with keel cooling or heat exchanger
- Optional: Coolant circuit for sea water cooling
- Optional: Mounting system for high acoustic and shock requirements



### Noise reduction

Significant noise reduction can be achieved with various custom-optimized mounting systems.

#### 1 Double Resilient Mounting System

Engine and alternator are resiliently mounted on a base frame, which is itself connected to the ship foundation by rubber mounts. This leads to significantly less structure-borne noise being passed into the ship's structure.

#### 2 Sound Enclosed Generator Sets

Generator Sets can be equipped with tailor made sound enclosure systems, reducing the radiated air-borne noise and the radiated heat transferred to the machinery spaces. Sound enclosures can be implemented with internal cooling systems and fire-fighting systems.



