

Water-Jacket-Cooled Motors

Off to new shores with compact efficiency



Drive equipment such as the motors on your vessel or in your water/waste water plant are subjected to extreme operating conditions. Frequently located in tight sections of the ship that allow for little space, propulsion units are continuously exposed to dust and dirt, as well as to the corrosive atmosphere created by salt vapors. The limited space in the ship makes an efficient cooling concept extremely important. Motors often operate in ambient temperatures above 40 °C. Not surprisingly, conventional solutions are often anything but ideal.

On your ship, every cubic meter of space counts. Whether your needs call for more cargo or fuel capacity, larger passenger cabins, a slimmer and faster vessel design – space and power efficiency are essential. This requires an electric motor with a high power density and significantly lower noise emissions that can operate even above ambient temperatures of 40 °C without power reduction. A motor that outperforms in small and hot spaces and that is especially designed for rugged requirements.



n-compact

WATER-COOLED

With the 1LH8, Siemens developed a water-jacket-cooled motor for low-voltage applications capable of sustained operation in ambient conditions that are non-ideal and non-standard. Siemens 1LH8 motors are designed to handle ambient temperatures of up to 55 °C without power reduction, a performance that is virtually unthinkable with standard fin-cooled designs. Featuring significantly lower sound-pressure levels than fin-cooled motors, they also achieve a higher power density than conventional water-cooled motors with a top-mounted cooler. What is more, they require less space.

SIEMENS

The shipbuilding version of the 1LH8 comes available with certification documentation from the major accreditation organizations (Lloyds Register, German Lloyd, Bureau Veritas, Det Norske Veritas, American Bureau of Shipping, Chinese Classification Society). Its standard features include a special bearing construction, anti-condensation heating, offshore painting and no blank parts.

Siemens 1LH8 motors offer several advantages, including:

- Higher allowable ambient temperatures; water-cooled design, which means: no power reduction at ambient temperatures higher than 40 °C
- Lower noise level in relation to air-cooled motors
- Especially designed for frequency converter operation
- Higher power density: motor dimensions are smaller in relation to conventional water-cooled motors

Siemens 1LH8 motors are especially designed and suitable for the following applications:

- Shipbuilding: thruster drives; electrical propulsion motors, especially in ships with less space such as SWATH ships; winches and pumps where dimensions and ambient temperatures are critical
- Mining/Tunnel constructions
- Water/Waste water applications

Low-voltage water-jacket-cooled motors			
Applications: propulsion, water / waste water, tunnel drilling and others			
Voltage	660 V – 690 V/50Hz		
	Pole number	Power	
	4	800 kW	1150 kW
	6	630 kW	920 kW
	8	500 kW	695 kW
Voltage	660 V – 690 V/60Hz		
	Pole number	Power	
	4	940 kW	1350 kW
	6	740 kW	1080 kW
	8	587 kW	816 kW
Frame size	450		
Efficiency	96.2–97%		
Type of construction	IM B3; IMV1		
Protection degree	IP54		
Ambient temperature	55 °C		
Water temperature	35 °C		
Frame material	welded steel		

