DESMI OptiSave™

Saving Energy Means Longer Operation Time

Defense

DESMI
Make life flow

Increase your savings

OptiSave™

What can OptiSave™ do for you?

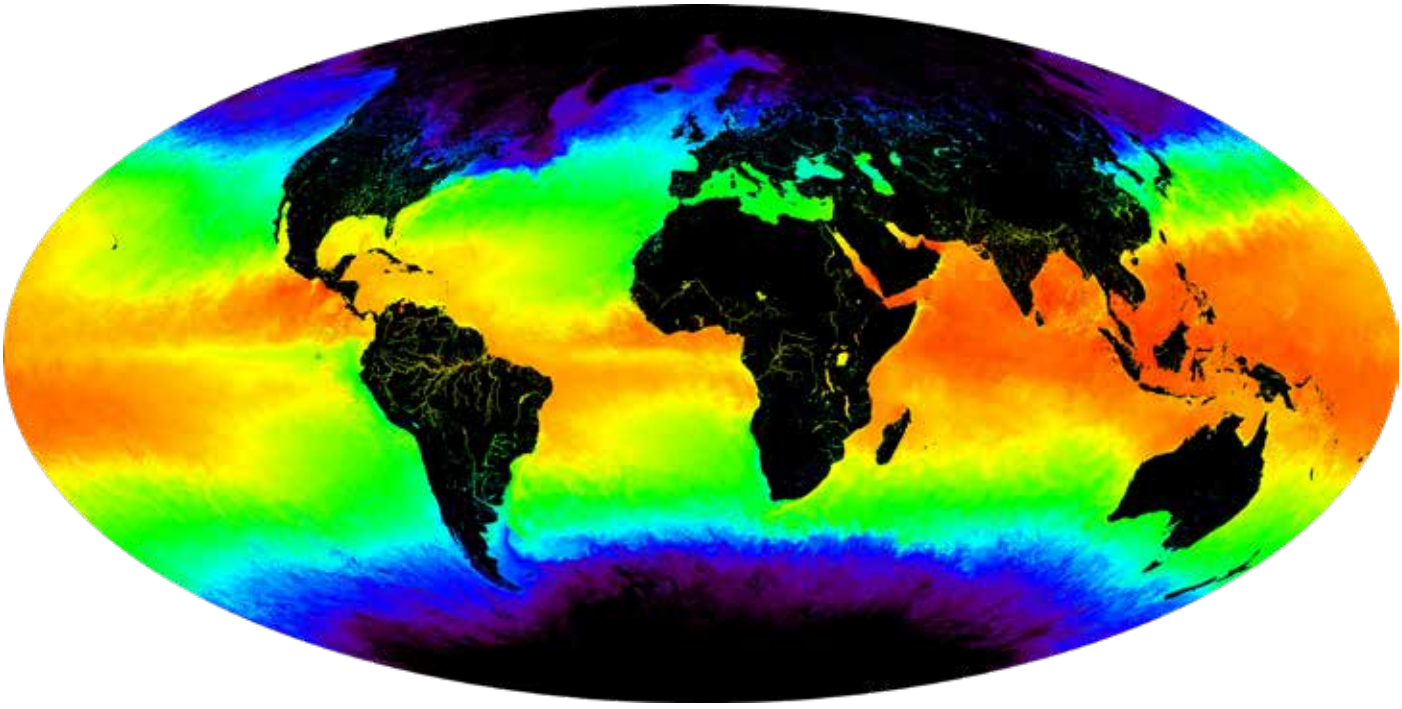
Any diesel driven vessel is still only transforming some 30% of the fuel energy into mechanical energy, meaning that some 70% of the fuel is converted into heat, either to the motor parts or to the exhaust. When designing cooling water systems for engines, the heat energy to be removed from the engines is known, but the actual seawater temperature is unknown, which means that designers are forced to use 34°C / 92°F as seawater temperature. Therefore, the system is heavily over-dimensioned when sailing in e.g. Danish and North Atlantic waters.

By adding monitoring of seawater temperature, seawater cooling outlet temperature, and a frequency converter it is possible to adjust the seawater cooling flow to the actual requirement. On top of this saving the change to LED lights, OptiLED™, will increase your savings even more.

What we do:

- Operate Seawater Cooling Pumps according to the actual temperature – meaning the colder the seawater temperature, the lower the amount of fuel used.
- For increasing the advantages also the Fresh Water Cooling Pumps are controlled.
- Engine Room Fan Control. The fans are controlled based on the actual conditions, i.e. pressure at engine room, and not a worst case scenario. All safety issues are taken into consideration.
- Change to LED lights is a quick way to save energy. Normally the existing light fixture can be used with new LED bulbs.

You can choose all saving parameters or only some of them, depending on the actual conditions.



Saving Energy means Fulfilling new COP21 Requirements for the Military to Reduce CO_2 Emission

Did you know that with OptiLED™ we can reduce the power consumption by 50-70% and increase the light output/ luminous efficiency by up to 20%

The main challenge with regard to warships is EMC noise coming from the frequency converter as well as from the electric motors when using converters. This noise is unwanted at increased alert status as it must be as difficult as possible to detect the position of the vessel.

The DESMI OptiSave™ includes the possibility of instant by-pass of all systems including stop of frequency converters without any interference with the vessel's operation. The vessel can instantly change from routine to a higher alert status.

The OptiSave™ control and monitoring system includes the facility of monitoring the pump's revolutions and gives an alert when the calculated pump maintenance is required. The maintenance intervals are normally prolonged due to reduced pump rpm. Save spare parts and work compared to conventional pump operation.

The benefits of DESMI OptiSave™ are:

- Pump energy savings up to 80%
- Return on investment in less than 18 months
- Longer lifetime on pumps due to less wear and tear
- Reduced CO_2 emission
- Improved endurance due to lower fuel consumption

How much fuel can be saved compared to conventional operation?

Seawater Temp ./ ME Load	55 kW Seawater Cooling Pump	45 kW Fresh Water Cooling Pump	Engine Room Fans 33 kW	Extra Fuel Available per Week	CO_2 Saving per Week
30°C/ 86°F / 100%	42%	37%	15%	2116 litres / 559 gallons	5,629 kg / 12,400 pounds
25°C / 77°F / 90%	79%	39%	25%	3278 litres / 866 gallons	8,719 kg / 19,222 pounds
20°C / 68°F/ 80%	81%	43%	40%	3656 litres / 966 gallons	9,725 kg / 21,440 pounds
15°C / 59°F/ 70%	81%	47%	40%	3739 litres / 988 gallons	9,946 kg / 21,927 pounds
10°C / 50°F/ 60%	81%	50%	40%	3805 litres / 1005 gallons	10,121 kg / 22,313 pounds
5°C / 41°F/ 50%	81%	50%	40%	3805 litres / 1005 gallons	10,121 kg / 22,313 pounds

We exist to help you complete your missions

DESMI works closely with MODs, OEMs, and shipbuilders to deliver critical flow processes that help governments on every continent achieve their national security ambitions. Our pumps and supporting systems are trusted worldwide for dependability and performance.

We help you maintain stringent operational standards through sector insight, tight security protocols, and the flexibility to navigate complex processes. We offer global support and after-sales service plus an efficient global supply chain.

Founded in Denmark in 1834, we have provided the expertise, solutions, and aftermarket support our customers need for nearly two centuries. We help you operate more efficiently and reliably, enabling you to complete your missions, achieve your tactical goals and strategic objectives – and get your vessels and crews safely back.

Together, we can make a difference, whatever the future holds. Because we, like you, are here to **make life flow**. For more information, visit **desmi.com**

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