K-Sim® Engine

KONGSBERG

KONGSBERG Engine Room Simulators

K-Sim Engine Diesel Electric Dual Fuel DEDF 21 LNG Carrier

The K-Sim Engine DEDF 21 LNG Carrier DEDF21model is based on a Dual Fuel Diesel Electric (DFDE) Engine Room configuration from a modern liquefied natural gas (LNG) carrier with two synchronous propulsion motors, geared down to one propeller. Each propulsion motor has two separate three phase winding which enables “half motor” operation. The vessel is fitted with one fixed pitch propeller.

The power plant consists of a 6.6kV system, fed by 4 Wärtsilä Dual Fuel medium speed generators. The engines can operate on LNG, MDO and HFO. The control and automation systems include sophisticated power management, gas management pump control and propulsion control systems. The steam plant includes two large oil fired boilers and feed water system. Control room operator panels as well as bridge and steering panels are included.

Training objectives

The K-Sim Engine DEDF 21 LNG Carrier DEDF21 model is designed to be a valuable tool in the basic and advanced training of marine engineers. The training objectives are to train junior engineers in basic engine room operations, senior engineers in emergency operations and troubleshooting, and to train senior and chief engineers in optimal operation, fuel economy and energy conservation. This is achieved by controlled training, leading to a better understanding of the total plant operation, as a result of a realistic simulation of a real engine room.

Compliant with industry requirements

KONGSBERG’s simulator models exceed requirements in the STCW convention, Regulation 1/12 and fulfill DNV’s standard DNV-ST-0033 for Maritime Simulator Systems.

KONGSBERG ENGINE ROOM SIMULATORS

Our range of K-SIM Engine Room Simulators provide realistic, handson experience in a ship-like environment. Systems include vital components, such as main engine remote control, engine-room local panels, controllers, engine telegraph, alarm systems, power supply switchboards, engine sounds etc.

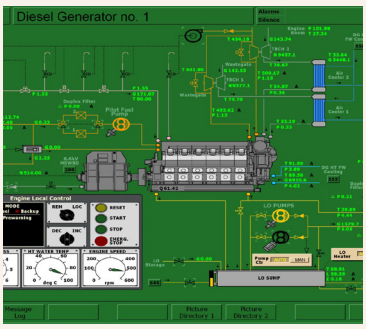
We have an extensive model library of different propulsion plants and engines types.

Our library includes models of diesel engines such as MAN B&W, Wärtsilä, Sulzer, Pielstick, MaK and MTU. We have Dual Fuel LNG engines & Methanol engine as well as gas turbine, diesel-electric, water jet and steam propulsion plants.

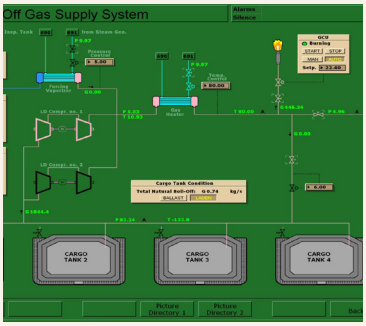
Our systems can be easily networked with our full ship’s bridge simulator for total ship training.

Model Features and Details

Dual Fuel Generators	3 × 6.6kV 11.3MW 1 × 6kV 5.6 MW	
Dual Fuel Generator Speed	514	RPM
Fuel Consumption	FO: 186g/kWh at MCR	
Gas Consumption	DG 1 - 3 2570 sm3/h DG 4 1285 sm3/h	
Emergency Generators	2 × 440V / 750kVA	
Propulsion Motors	2.2kV / 16MW	
Bow Thruster	1 × 6.6kV / 1700 kW	
Propeller Speed	0-82	RPM
No. of Thrusters	1	
Length overall	285,4	m
Breadth moulded	43,4	m
Draught	11,35	m
Tonnage	97562	GRT
Speed	19,7	knots



Diesel Generator



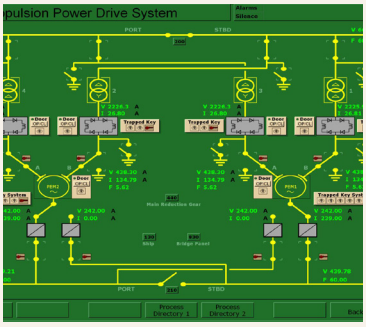
Boil Off Gas Supply

Model Main Specifications

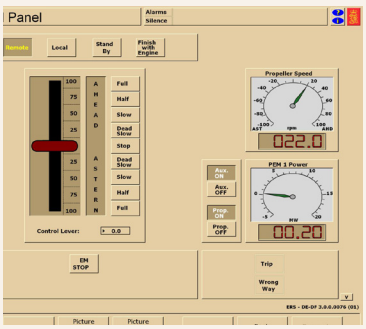
High fidelity engine room systems include:

- Sea & LT/HT fresh water systems, incl. FW generators
- Electrical Power plant, incl. 6.6kV, 440V & 220V switchboards
- Start and service air compressors
- Steam Plant
- Boil off gas system
- Dual Fuel engines
- Gas management system
- Power management system
- Diesel and heavy fuel oil systems, incl. bunker, settling and service tanks, separators
- Fuel oil supply systems, incl. viscometers
- Lubricating oil systemsm incl. LO purifier
- Stern tube systems
- Steering gear/autopilot systems, incl. double acting IMO type steering gear. Autopilot
- Propulsion control system, incl. Bridge, ECR and local control
- Propulsion power drive system incl. Transformers, freq. converters and excitation
- Propulsion motor cooling system, incl. Sea & FW system
- Main bilge system
- Bilge & sludge system, incl. Bilge separator
- Ballast system, incl. Heeling system
- Fire main & sprinkler system
- Deck Machinery

Note: Specifications subject to change without notice



Propolsion Pwer Plant



Local Control Panel

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