

MV ENERGY SWAN

ST-216-L DESIGN



TECHNICAL OUTLINE SPECIFICATION MULTIPURPOSE FIELD SUPPLY-, PIPE CARRIER VESSEL Yard: Hull # 102 at Aker Brattvåg – Delivered 26.05.2005

Name of ship: Energy Swan
Port of registry: Aalesund
Distinctive number or letters: LFUR
IMO Number: 9319985
Maritime Mobile Service Identity (MMSI): 258069000
DNV ID: 25667

MAIN DESCRIPTION		MEASUREMENTS	
Type	: MULTIPURPOSE FIELD / PLATFORM SUPPLY VESSEL.	Length o.a.	: 93,40m
Classification	: 1A1 ICE C OIL-REC SF LFL* COMFORT-V(3) E0 DYNPOS- AUTR, CLEAN DK (+) HL (2,8)	Length b.p.p.	: 82,20m
		Breadth mld.	: 19,20m
		Depth Main dk.	: 8,40m
		Draught max.	: 6,82m
		DWT	: 5304T
ERN Numbers: 99,99,96, 96		Gross Tonnage	: 4180T
In Compliance with NAUT OSV(A) guidelines		Deck load, VCG 1m a.dk.	: 3100T
NOFO 2009			



CARGO CAPACITIES

DISCHARGE RATES

Work/Cargo Deck area: 1041m² (65,5m x 15,9)

Deck strength: 10t/m² frame 10-64 and 5t/m² frame 64-101

Fresh Water	: 1216m ³	- 7650 bbls	1 x 250m ³ /hour	- 9 bar
Fuel Oil	: 1340m ³ (1197,3 m ³)	- (6290) bbls	1 x 250m ³ /hour	- 9 bar
Liquid mud	: 913m ³	- 5742 bbls	2 x 100m ³ /hour	- 24 bar
Brine	: 456m ³	- 2868 bbls	2 x 100m ³ /hour	- 24 bar
ORO	: 1535,3m ³	- 9647 bbls		
DW/ballast	: 1000m ³	- 6290 bbls	1 x 250m ³ /hour	- 9 bar
Methanol	: 150m ³	- 943 bbls	4 x 75m ³ /hour	- 9 bar
Baseoil	: 242m ³	- 1525,9 bbls	1 x 150m ³ /hour	- 9 bar
Cement/barite	: 486m ³	- 17163 cu.ft	2 x compr.29,5m ³ /min.-	6 bar

Height of cargo rail: 3,60m

All mud/ brine tanks have agitators. Tank washing system with hot/ cold water and chemical injection in washing water for mud, brine and base oil tanks.

Flow meter for Fuel Oil.

Note! Separate pumps- and piping system for all types of liquid cargo.

Loading and discharge stations on both sides amidships and aft.

MACHINERY -PROPULSION

PERFORMANCE

Main engines can be operated @ 900rpm's and 750rpm's

Main eng.	: 2 x Caterpillar Type 3612 3800/3160kW each	Max speed, approx.	: 18,5 knots ~ 29,7 t/24hrs
Shaft gen.	: 2 x Marelli 630 LB8 2500/2080 KVA each	Service speed	: 13,5 knots ~ 11,5 t /24hrs
Aux gen	: 2 x Caterpillar Type 3408 410 KVA each	Eco speed	: 12 knots ~ 9,0 t / 24 hrs
Propeller Plant	: 2 x Rolls-Royce Azipull 120 3500 kW each	Stand by on field	: 5,1 t/ 24 hrs
Bow thrusters	: 3 x 770 kW, Kamewa Ulstein	DP operation	: 7,6 t/ 24 hrs
Emergency gen.:	1 x Caterpillar Type 3056T 123,8 KVA	Port consumption	: 0,8 t/ 24 hrs

The azimuths are driven via shafts from main engine.

DECK/RESCUE EQUIPMENT

ACCOMMODATION

Tugger Winches	: 2 x 20t	Total	: 28 persons
Capstans	: 2 x 10t	Cabins	: 12 x 1 (single) bed cabins
Cargo securing Winches	: 6 x 2t	Cabins	: 8 x 2 (double) bed cabins
Windlass/Mooring	: 2 off	Day room Smokers	: for 6-8 persons
Cranes Stb. Side	: 4 tons @ 10m	Day room No smokers	: for 12 persons
Cranes Bb. Side	: 1,5tons @ 8m	Coffee shop	: 1 off, main deck
Life rafts	: 1 x 25 men each side	Hospital	: 1 off, main deck
Life rafts	: 6 x 16 men each side	Reception	: 1 off, main deck
Survival Suits for 32 persons.		Laundry	: 1 off, main deck
Lifesaving equipment according to NMD rule requirements.		Gymnasium	: 1 off, main deck
		Ship`s office	: 1 off, Captains deck
		All cabins with toilet, shower and Internet connection.	

1 off Fast Rescue Craft: MP-Springer 741 with 200hp engine

Transom with 16m removable bulwark on port side.

D-rings sea fastening arrangement for deck cargo.

NOFO and Reefer connections on Deck

Port Side Rail fwd:
2 off 230V 16Amp 3Phase REEFER



Behind superstructure:
2 off 440V 32Amp 3Phase NOFO
2 off 230V 16Amp Single Phase
NOFO



Starboard Side Rail fwd:
2 off 230V 16Amp 3Phase REEFER



Port Side Rail midship:
4 off 230V 16Amp 3Phase REEFER



Stb Side Rail mid:
4 off 230V 16Amp 3Phase REEFER



Port Side Aft:
4 off 230V 16amp Single Phase
REEFER (EX/NOFO connection)
2 off 230V 16amp Single Phase
NOFO



Stb Side Aft:
4 off 230V 16amp Single Phase
REEFER (EX/NOFO connection)
2 off 230V 16amp Single Phase
NOFO





NAVIGATION EQUIPMENT

COMMUNICATION EQUIPMENT

1 x X - band Radar ARPA	According to GMDSS A3
1 x S - band Radar ARPA & interswitch	1 x Radio Plants GMDSS
2 x Direction finder (VHF and MF)	1 x Satcom «F» w/ telex & fax
1 x DGPS GP90 & AIS FA100	1 x Watch keeping receiver
3 x Gyro, 1 x Autopilot, 1 x Magnetic compass	2 x VHF duplex & DSC
1 x Echo-sounder	1 x VHF semiduplex
1 x Navtex-receiver	1 x Mobile telephone
1 x ECDIS voyage computer w/back-up	1 x intercom w/radio / loudhailer
DP ref. systems: 3xDGPS, 2xMRU, 1x Fanbeam, Radius	LAN arranged in accommodation.
1 x Voyage Data recorder	3 x GMDSS VHF
3 x Wind sensor	Various communications equipment.
	Vsat 512/512 internet + phone lines

TELEPHONE SWITCH BOARD:

- Lines in: Satcom «F», Mobiltel. GSM, VHF,
- Lines out: Bridge, Eng.ctrl.room., office, mess room, Captain, Chief Eng., Cabins

FIRE FIGHTING SYSTEM:

- According to Class requirement
- Fire fighting in Engine Room by Inergen
- Fire fighting in Incinerator Room and Paint Store by Co2



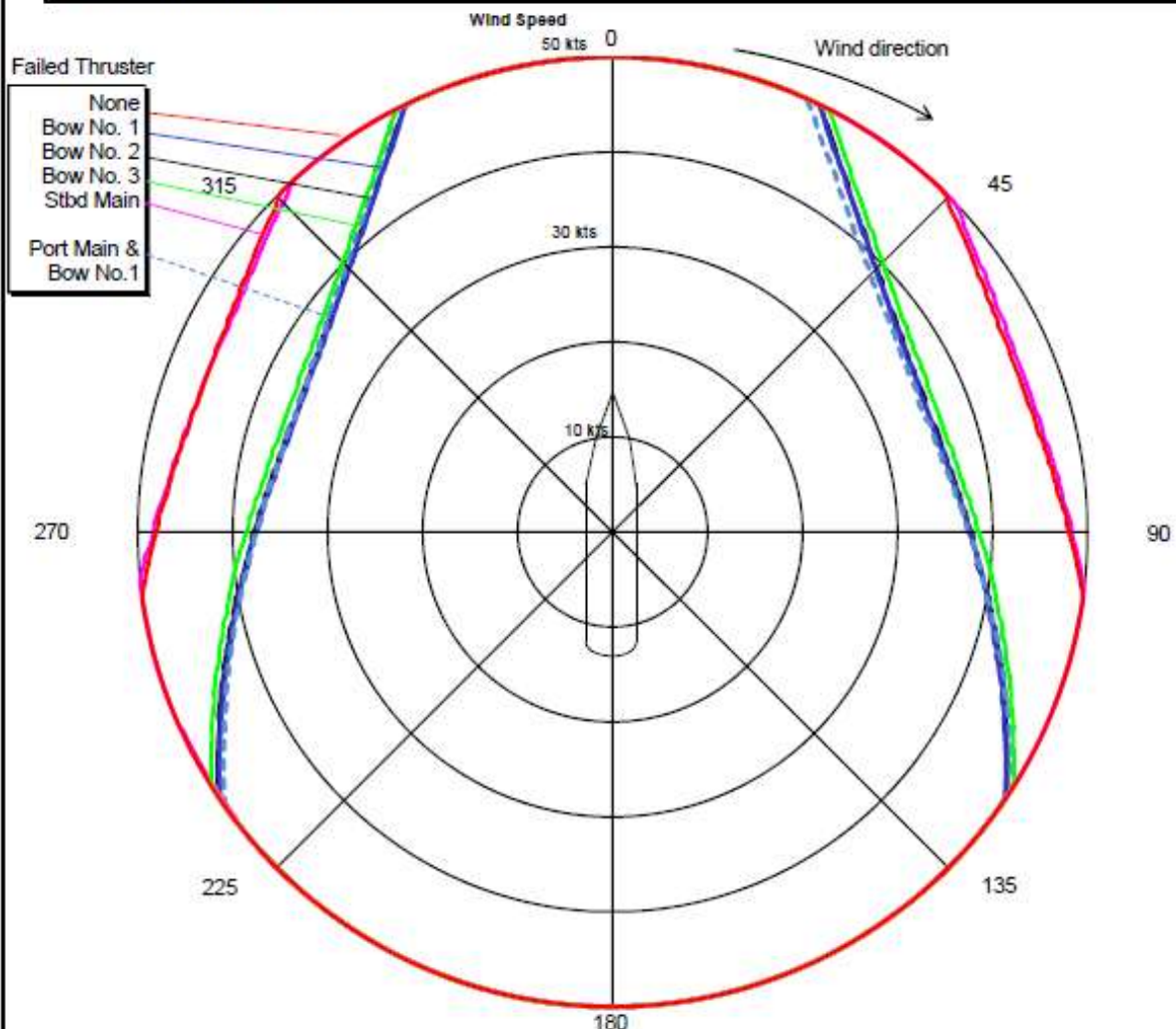
Environmental Regularity Number

Figure 1

Environmental Regularity Number

ERN (99, 99, 96, 96)

Vessel			
Energy Swan (ex Aker Brattvaag Hull NB-102)			
Propulsors		Environment	
Bow thruster	1 × Tunnel thruster (770 kW)	Max. Wind Speed	25.7 m/s (50 kts)
Bow thruster	1 × Tunnel thruster (770 kW)	Current Speed	0.75 m/s
Bow thruster	1 × Tunnel thruster (770 kW)	Sig. Wave Hgt.	wind driven
Port Main thruster	1 × Azimuth thruster (3500 kW)	Collinear environment	
Stbd Main thruster	1 × Azimuth thruster (3500 kW)		
100% operating thrust available			



Date: 19-May-11

Created by: AZ

Holding plots are based on customer supplied information and are only estimates. True vessel capability must be determined through sea trials.

Energy Swan

PLATFORM SUPPLY VESSEL

Energy Swan is a supply vessel/ pipe carrier driven with shafts directly coupled to two efficient Azipull main thrusters astern, and 3 electrical CCP tunnel thrusters in the bow. The vessel is designed to meet the general market, in addition to be very suitable for field support & ROV duties, and is equipped with DP2 class dynamic positioning system (Nautronix NMS6000). Energy Swan is approved for DP2 Operations @ 900 rpm's and 750 rpm's on ME's, which make the vessel very economical in operation. This as it provide the option of setting up for DP2 Operations according to the anytime prevailing environmental conditions. The benefit is significant savings in FO / Lub. consumption and "wear and tear" on machinery.

The hull is designed for low fuel consumption and excellent sea-keeping. This in addition to low noise and vibration in hull and superstructure ensure high comfort. The vessel is designed in accordance to the class notation "Clean" and high focus are given on reduced fuel consumption and clean operation in general which means lesser emission to the environment.



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