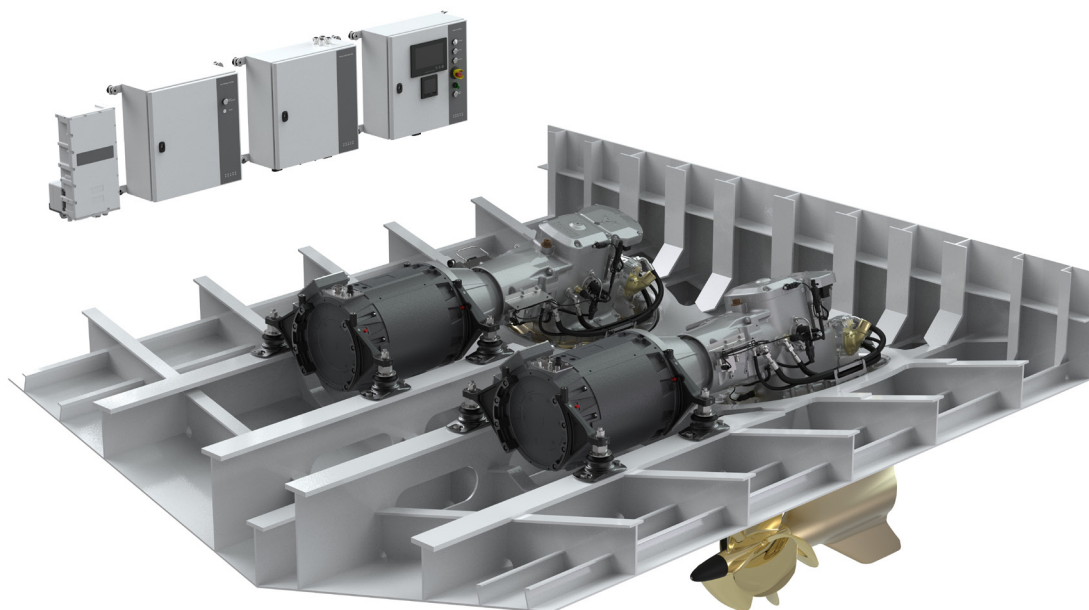


VOLVO PENTA INBOARD PERFORMANCE SYSTEM

IPS 450 ELECTRIC



General Data

System designation	IPS450 Electric
Electric Motor (EM) power	250 kW @2450 rpm
Electric DC power *	261 kW
Propellershaft power	236 kW @2450 rpm
Rating	R3
Dry weight with IPS15, approx. kg (lb) **	871 (1920)
Propeller series	N1-N7, NS4-NS5
Traction voltage	770 V DC nominal
Low voltage	24 V
Speed range	15 to 35 knots

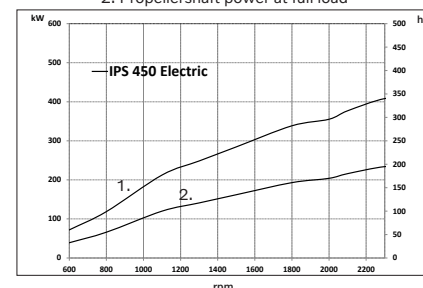
Technical data according to ISO 8665-2.

* measured at inverter

** weight including mouting brackets, flexible mounts and standard CV-shaft, bell housing

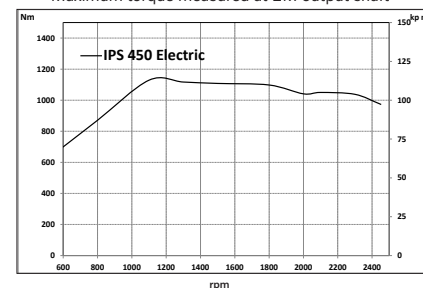
Power

1. Maximum power measured at EM output shaft
2. Propellershaft power at full load



Torque

Maximum torque measured at EM output shaft



IPS 450 ELECTRIC

Technical description

Features

- Volvo Penta has created capacity to provide a full solution, together with subsidiaries and partners, for the highly complex Marine Electric Offer installations.
- Future proofing IPS and leverage on all existing IPS features and benefits:
 - Efficiency
 - Maneuverability
 - Responsiveness
 - Ease of installation
- Flexible solution:
 - Configure the system according to operating profile
 - Select battery type according to operating profile
 - Possibilities for other power source and configurations

Control system

- Fully integrates the electric machines, electronics and the unique set of EVC features, such as Joystick Docking, Dynamic Positioning System, and more.
- Local control stations
- Shut-down system

IPS transmission

- Forward-facing, twin counter-rotating propellers
- Electronic steering, enabling features such as joystick maneuvering
- Hydraulic gear shift system with low speed mode as standard
- Water in oil sensor

- Oil change from inside the boat
- Nickel Aluminum Bronze and stainless steel in all main under water components
- Complete range of propellers available
- Several optional jackshaft lengths

Electric Machine

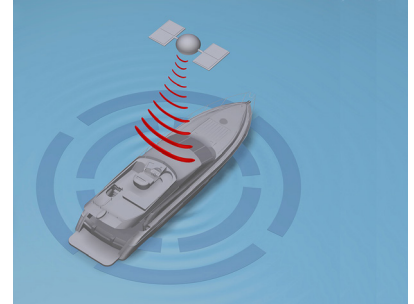
- The Electric Machine is a three-phase motor of permanent magnet type
- Synchronous Reluctance assisted Permanent Magnet (SRPM) technology
- Highly efficient throughout the operation range
- Extremely compact and robust aluminum frame structure
- Liquid cooled with water-glycol mixture
- Allowed coolant temperature up to +65°C
- IP65 enclosure class to maximize reliability, IP67 available as option

Electric Machine Drive

- Primary function is to convert DC voltage to AC voltage
- Secondary function is to control the speed and torque of the Electric Machine

Energy Management System

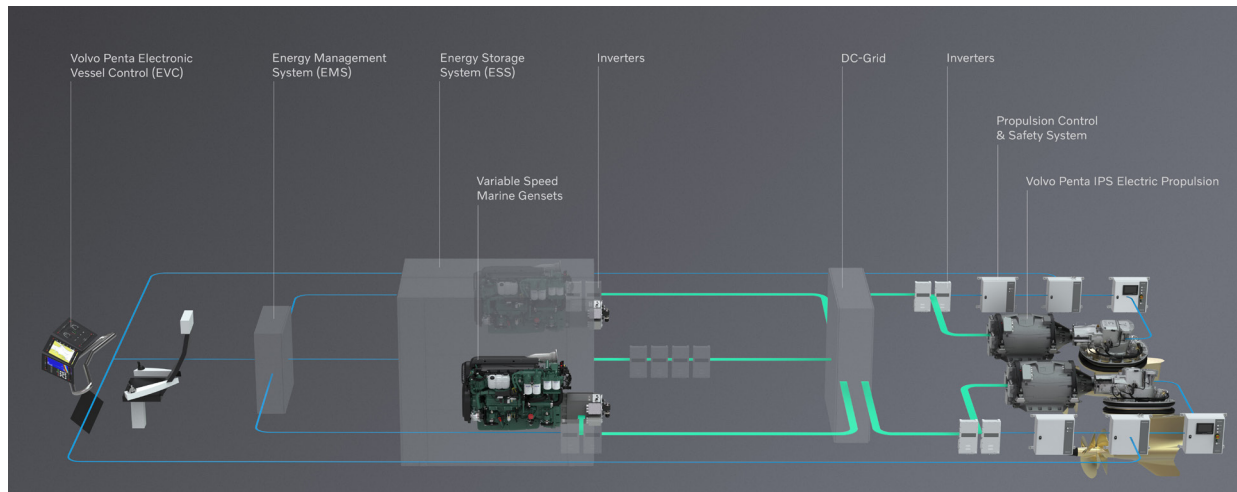
- *DC grid interface*
The propulsion system is optimized to operate on a nominal fixed voltage of 770V, with protection for over voltage and under voltage.



- *Genset*
Volvo Penta also offers variable speed gensets, which are designed to integrate towards the same DC-grid.
- *Battery ESS*
Not included in Volvo Penta offering, provided by ZEM or other 3rd parties.

Typical applications

- Designed for Marine Commercial use:
 - Crew transfer vessel
 - People transportation
 - Coast guard, pilot and patrol
 - Yachts
- DNV type approved, more to come.



Shaded areas provided by qualified 3rd parties

Contact your local Volvo Penta dealer
for more information regarding Volvo
Penta engines and optional equipment/
accessories or visit
www.volvopenta.com



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