

THE SWITCH SINGLE DRIVE FOR MARINE



STANDARD DRIVE FOR SPECIFIC MARINE APPLICATIONS UP TO 6 MW

Over 1,500 rugged marine-specific drives now in operation.



Propulsion

Drive to connect electric propulsion or other motors to AC system. Both passive and active rectifier available. Support for tandem configuration.

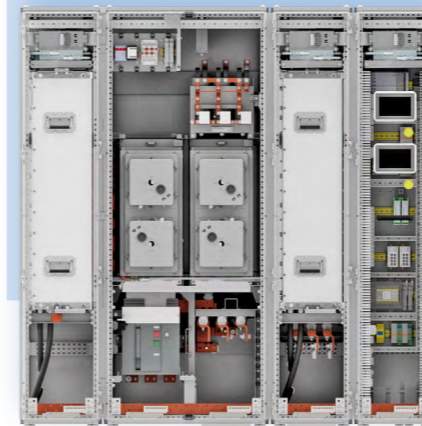
Power range from 800 A to 5,600 A.



Shaft generator

Drive to connect shaft generator to AC system. Both inline and geared solutions available. PTI-PTO and PTH functionality.

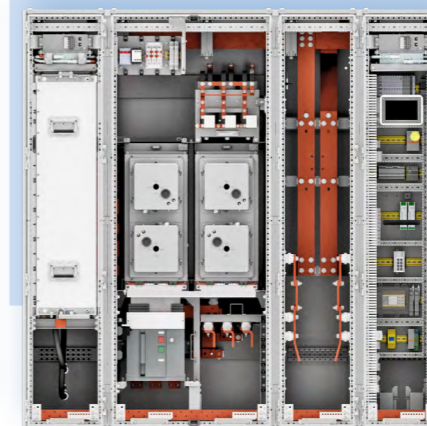
Power range from 800 A to 5,600 A.



Battery

Drive to connect battery to AC system, enabling effective battery use for multiple purposes. Load sharing with other energy sources.

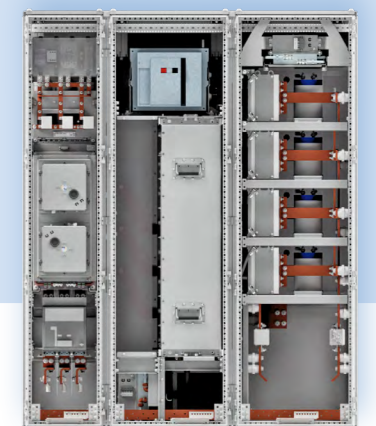
Power range from 800 A to 1,600 A. Several units can be connected to the same system.



Fuel cells and solar

Drive to connect fuel cells, solar or other DC source to AC system. Configurable amount of DC outputs.

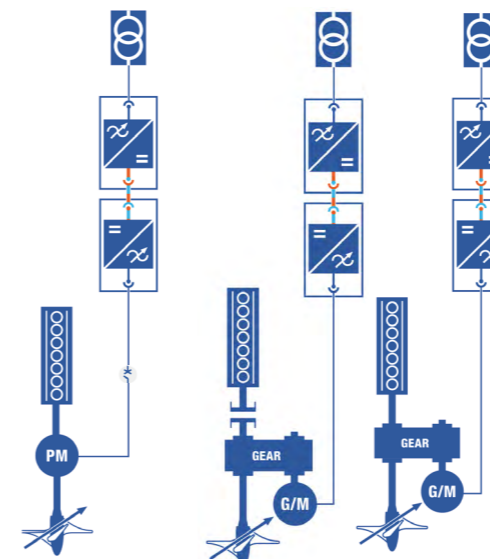
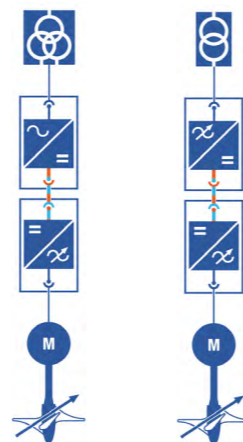
Power range from 800 A to 1,600 A. Several units can be connected to the same system.



MARINE-SPECIFIC DESIGN

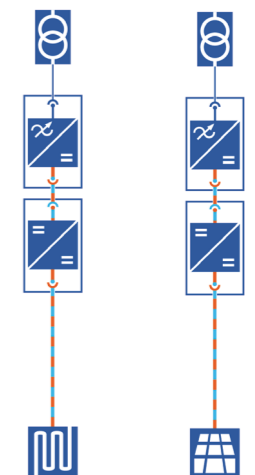
No compromises in features, materials or solutions

- **Very simple and robust cabinet structure**
- **Fast connectors in the power module** - enables fast and easy maintenance
- **Allows system-level optimization**
- **Vessel's freshwater cooling system connection**
- **Rigid foundation with vibration dampers** - for smooth operation
- **IP44 enclosure for both power module and cabinet** - robust for the environment and fast maintenance

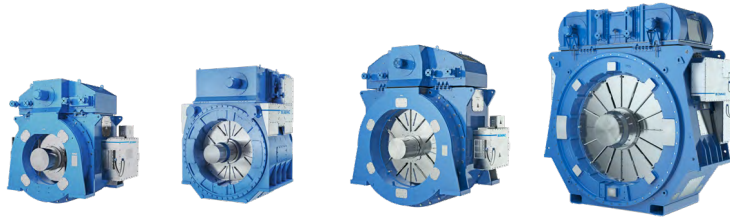


Inline
PTI-PTO

Geared
PTI-PTO-PTH



WIDEST RANGE OF PERMANENT MAGNET (PM) MACHINES AVAILABLE



PMM1000M

Up to 250 rpm / 230 kNm
Typically used in 1-2 MW direct-drive systems

PMM1200M

Up to 250 rpm / 450 kNm
Typically used in 1-3 MW direct-drive systems

PMM1500M

Up to 220 rpm / 630 kNm
Typically used in 2-4 MW direct-drive systems

PMM2000M

Up to 130 rpm / 2,100 kNm
Typically used in 4-12 MW direct-drive systems

Our wide range of PM machines improves overall efficiency for propulsion and onboard electricity generation, helping reduce CO₂ emissions and operating expenses.

Advantages of PM technology

- Higher efficiency, lowering fuel consumption and emissions
- Simple construction
- Higher reliability
- Less maintenance
- Reduced space requirements
- Enhanced shaft line dynamics

DIRECT-DRIVE PROPULSION



The Switch permanent magnet machine (PMM) can be used conventionally as a direct-drive propulsion motor with its own bearings. It can also be used as a novel concept, utilizing the common bearings between the propulsion shaft and the motor. A tandem setup is also possible on request.



The Switch is part of the BEMAC Group
whose products are unified under the BEMAC brand.

DRIVE-SPECIFIC TESTING AVAILABLE

The Switch offers full-power testing and drive-specific test setups at its various locations in Finland, Norway and China.

All tests fulfill international standards and class requirements.



Heiane test center – Norway

Member of the Energy House. System integration testing for DC-Hubs with batteries, fuel cells and more



Vaasa test center – Finland

DC-Hub testing, including all applications – AFE MI, DC/DC. Full-power testing over 3 MW



Lappeenranta Large Drive Test Center – Finland

Full-load testing capability for electrical machines and drives up to 18 MW



www.theswitch.com