

Subsea Variable-Speed Drive

Supporting the factory on the seabed:
Supplying power and protecting subsea
motors for compressors and pumps

1. Subsea Variable-Speed Drive

The subsea variable speed drive (VSD) is the unit responsible for supplying power and protecting subsea motors for compressors and pumps. It uses the field proven Siemens Perfect Harmony multi-cell topology with bypass capability, which provides high levels of redundancy and reliability. This drive is able to provide efficient and reliable control to different motor types, like induction motors and permanent magnet motors.

Siemens Energy subsea VSD design is flexible and can be adapted to different applications. Stand alone applications without other typical units from a subsea power grid is also possible. The multi-cell topology can be fully utilized if scaling is required, or even if multiple loads shall be supplied by the same unit.

The subsea VSD is a fluid-filled and pressure-compensated unit. Its natural-convection cooling reduces maintenance requirements and provides excellent reliability. The different components of the subsea VSD have been tested for pressure and fluid compatibility in an extensive qualification program. In addition, the design was verified using a prototype throughout extensive tests in factory and in shallow water conditions, performed in Norway.

The subsea VSD has also an integrated condition and monitoring system that is seamlessly integrated in the Siemens Energy subsea power control system and can easily be integrated with third party systems. This provides the operator with excellent transparency into the equipment and the status of its integrity, enabling optimization operation for enhanced performance and safety.

Key features Subsea Variable-Speed Drive

- Output voltage up to 7.3 kVac
- Output current up to 700 A
- Output power up to 8.8 MVA
- Modular and redundant design allows scaling of voltage and power
- Built-in isolation transformer at the input
- Pressure-compensated design
- Robust enclosure design with optimized natural cooling properties
- Biodegradable and environmentally friendly MDEL 7131® fluid filling
- Advanced condition monitoring system
- Qualified for 3,000 meters water depth

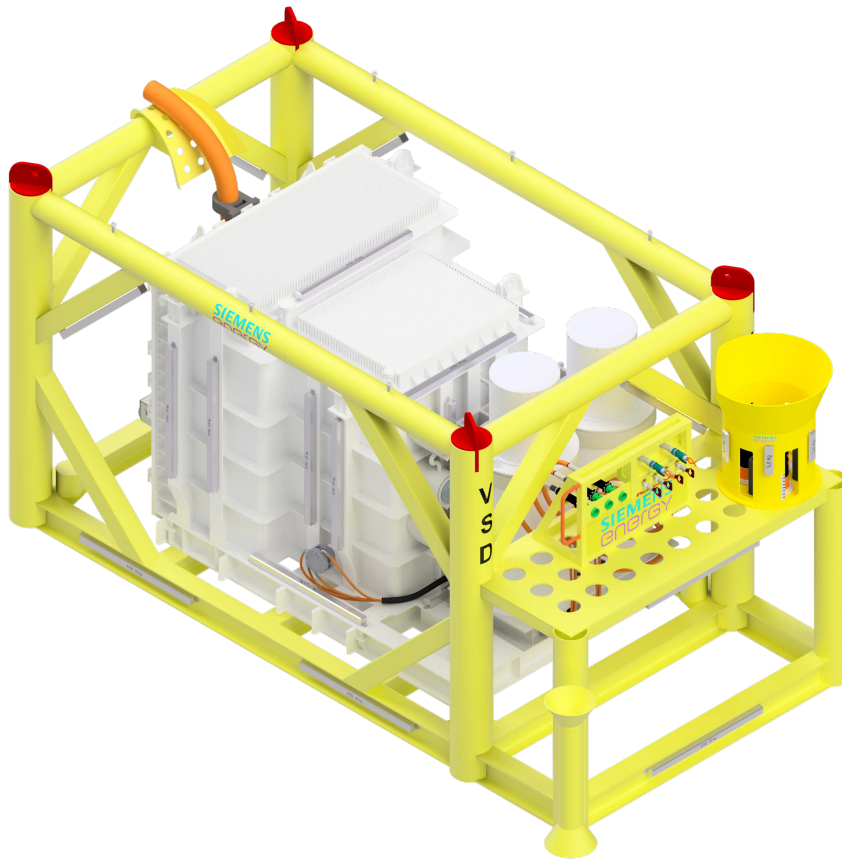


Figure 1 Subsea Variable-Speed Drive

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