

# Subsea Transformer

Supporting the factory on the seabed: The next generation of subsea transformers

## 1. Subsea Transformer

The subsea transformer is the main interface between a subsea transmission line and a subsea power distribution system. As a hermetically sealed, fluid-filled and pressure-compensated unit, the subsea transformer enables long step-outs, providing the right voltage level to a wide range of consumers, like subsea switchgears, subsea compressors and subsea pumps. Its natural-convection cooling reduces maintenance requirements and provides excellent reliability.

Siemens Energy subsea transformer design can be implemented in a wide power range. The electrical design is based on traditional onshore distribution transformers, but with an enhanced insulation system. All materials 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 transformer 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.

An integrated sensor and monitoring system can be seamlessly connected with Siemens Energy Subsea Power Control system. This provides the operator with a continuous status display of the transformer integrity, and the ability to optimize operations for enhanced safety.

### Key features Subsea Transformer

- Voltages up to 145 kVac
- Power rating up to 100 MVA
- Pressure-compensated design
- Robust enclosure design with optimized natural cooling properties
- Biodegradable and environmentally friendly MIDEL 7131® fluid filling
- Flexible interfaces (dry or wet-mate connections)
- Advanced condition monitoring system
- Qualified for 3,000 meters water depth

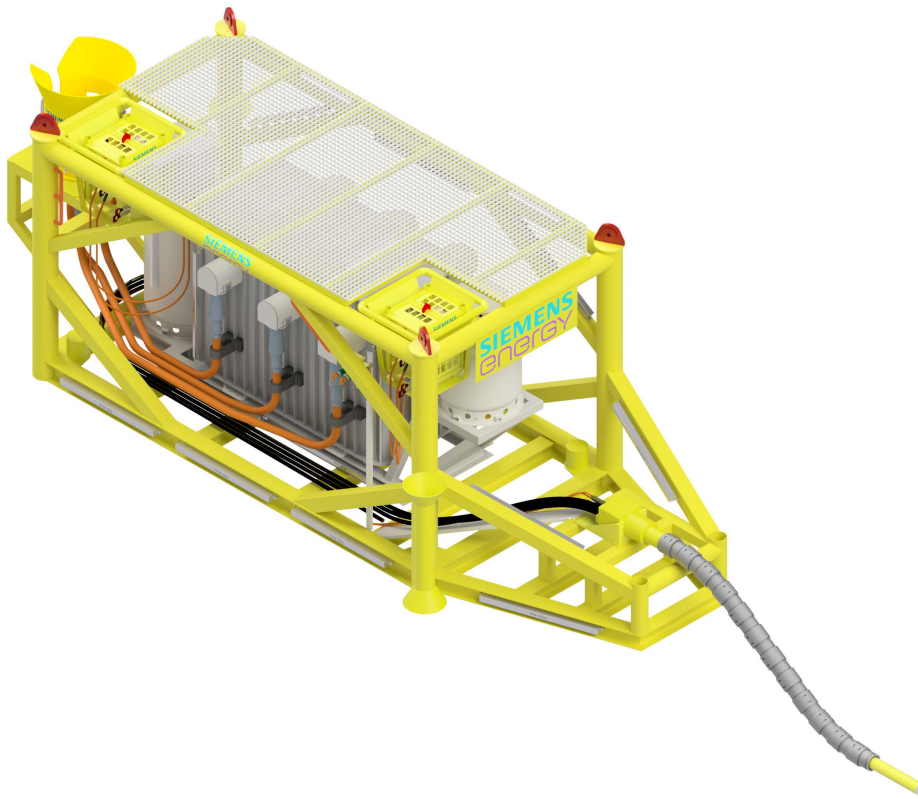


Figure 1 Subsea Transformer illustration

In 2021, the Siemens Energy Subsea Transformer was successfully operated in shallow water (Trondheim, Norway)

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