

Subsea Switchgear

Supporting the factory on the seabed: Power distribution

1. Subsea Switchgear

The subsea switchgear is the unit responsible for power distribution and protection of other units in a subsea power grid. It will receive medium voltage from a transmission line or subsea transformer, distributing both medium voltage and low voltage to different consumers like subsea variable speed drives or fixed-frequency loads.

The subsea switchgear is equipped with vacuum circuit breakers and SIPROTEC protection relays, providing reliable and field-proven protection to its medium voltage consumers. It uses the IEC 61850 standard protocol, making it easy to integrate to topside protection and power management systems. Each low voltage distribution circuit is also monitored and protected by both semiconductors and traditional contactors, combining fast response time and galvanic insulation.

Parts of the subsea switchgear are fluid-filled and pressure compensated, while others are gas-filled. This design allows excellent reliability by providing adequate environmental conditions to the different components in the system.

Siemens Energy subsea switchgear design can be typically equipped with 2 or 4 medium voltage circuit breakers, but it can be scaled up to fulfill project-specific needs.

The subsea switchgear 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 Switchgear

- Rated voltage range up to 38 kVac
- Rated current rating up to 1000 A (500 A per feeder)
- Modular design with vacuum circuit breakers
- 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

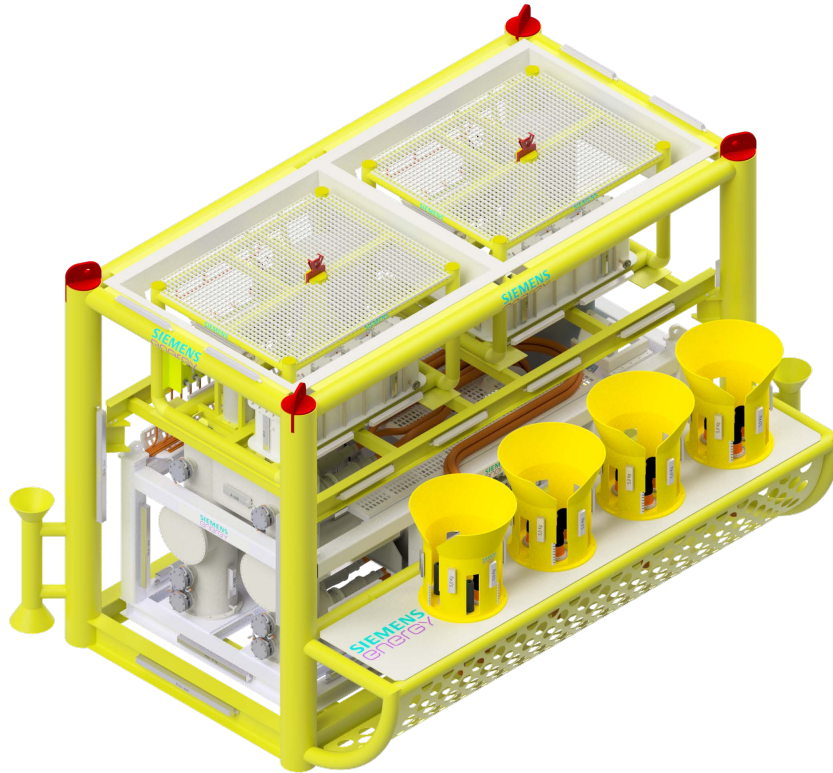


Figure 1 Subsea Switchgear

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