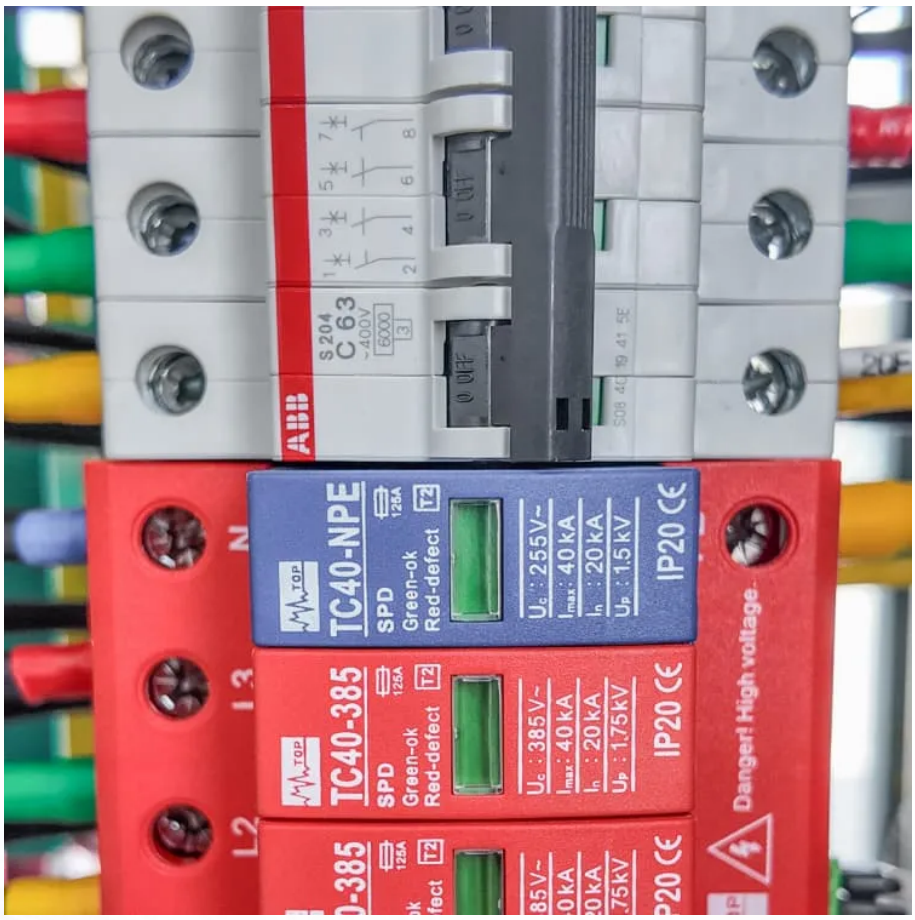
BUHLE POWER

Cooling system for wind power generation



Overview

How can wind turbines be cooled?

For example, the industry standard for cooling offshore large wind turbines adopted by many OEMs is forced air cooling in a closed loop configuration. This solution is bulky and furthermore increases in size and weight with the wind turbine output power.

Which type of generator is suitable for wind power application?

Author to whom correspondence should be addressed. Direct-drive generators are an attractive candidate for wind power application since they do not need a gearbox, thus increasing operational reliability and reducing power losses.

How to improve wind power generation reliability and reduce maintenance?

The wind power generation industry often prefers less performant conservative solutions against more performant but riskier ones. The steps that can be taken to increase reliability and reduce maintenance are as follows: Adopt a safe cooling fluid inside the generator like air or an inert gas.

Why do wind generators need to be serviced?

This method is usually adopted in larger generators (hundreds of MVA), which are usually onshore and easily accessible for maintenance. For wind power generation, which has an important offshore trend, the maintenance can be a drawback as two separate cooling systems need to be serviced.

Cooling system for wind power generation

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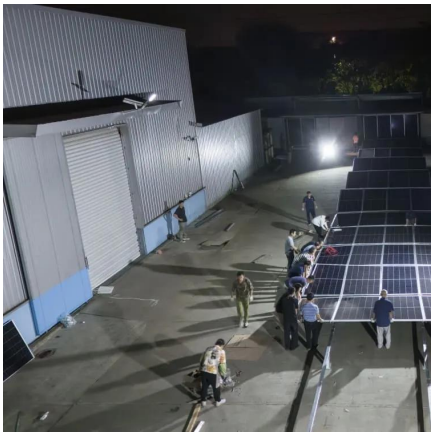

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