Improved converter system performance and reliability with CEJN quick couplings

Ten reasons to use CEJN quick couplings in converter systems

Power electronic converters in wind turbines are crucial components, but they can also be prone to frequent failures. MDPI[1] reported that one of the most common causes of failure is the inability to effectively dissipate heat. With the use of quick couplings, these failures can be reduced, and the lifetime of IGBTs can be extended. Here are ten reasons why you should consider using CEJN quick couplings in your wind turbine converter system.

ultraFLOW quick couplings

Non-drip quick couplings

1. Improved safety

Fire prevention: CEJN quick couplings reduce the risk of fire bridges and dried cooling water from minor leaks in converter systems and electronics.

Improved working conditions: Quick couplings improve working conditions by reducing liquid handling during service and maintenance.

2. Saves time

Complete water-cooled IGBT stacks with pre-filled coolant can easily be connected, eliminating the need to drain and refill the modules when working in the confined space of the nacelle.

3. Easy assembly and installation

Speed up assembly: CEJN quick couplings speed up the assembly and installation process, reducing production costs.

Accessibility: Quick couplings do not require tightening with torque precision in difficult-to-access areas, saving time and minimising the risk of forgotten tensioning.

Plug and Play: CEJN quick couplings are designed for easy plug-and-play installation.

4. Reduced maintenance costs

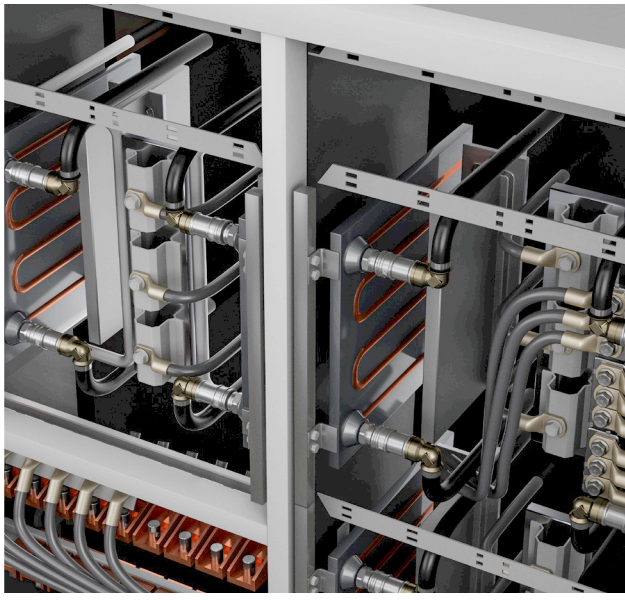
CEJN quick couplings only require draining of a limited amount of coolant, saving time and reducing costs. System downtime for maintenance work is further reduced as the quick couplings do not require post-tensioning.

5. Vibration resistance

Leakage is often caused by vibration, which occurs when screws, nuts and bolts loosen during operation and cause flanges to loosen. CEJN quick connectors are tested and approved according to harsh shock & vibrations standards, ensuring a long-lasting connection and leak-free performance.

6. Pre-filled IGBT stacks-modules

CEJN quick couplings make it possible to work with pre-filled modules, reducing production loss during maintenance. High-quality non-drip quick couplings eliminate the hassle of spills and leaks and make the IGBT replacement quick and easy with minimal downtime.



Blind-mate auto-couplings

Full-flow quick couplings

7. High flow performance

CEJN quick couplings are designed for optimal flow and have an exceptionally low pressure drop. This will minimise the overall system pressure and reduce operating costs.

8. World-class design and support

CEJN engineers have more than 500 years of combined experience in quick coupling technology, and our production capacity ranges from small quantities of specially developed quick coupling solutions to high volume standard products in various materials. CEJN will be with you all the way from initial request to design, prototypes, quality control and testing of your final product.

9. Flexibility

We have the ability to help with customised solutions for your project. Any spill-free blind-mate connectors, self-adjusting connectors, or fast connectors with integrated sensors for temperature, pressure, or flow can be customised to your specific requirements.

10. Internal testing and quality assurance

CEJN's laboratory has the capacity to help with testing and validation of flow performance in complex water-cooled IGBT stacks-modules. Our state of the art lab facilities also perform stringent testing of designs, seals, temperatures and liquids in various combinations and environments resulting in a higher quality final product.

Conclusion

In conclusion, using CEJN quick couplings in your wind turbine converter system will help improve safety, reduce downtime, make assembly and installation easier, reduce maintenance costs, ensure leak-free operation and help increase the output and profit of your overall investment.

[1] *Fischer K, Pelka K, Puls S, Poech M-H, Mertens A, Bartschat A, Tegtmeier B, Broer C, Wenske J. Exploring the Causes of Power-Converter Failure in Wind Turbines based on Comprehensive Field-Data and Damage Analysis. Energies. 2019; 12(4):593. https://doi.org/10.3390/en12040593*

Your choice for sustainable quick connect solutions

We have been producing professional, high-quality and innovative quick connect couplings here at CEJN since our first patented coupling was launched in 1955. CEJN is an independent global niche company with its head office in the heart of Sweden. Over the years we have expanded to 23 locations worldwide, supplying products and services to virtually every industry segment. At CEJN, we are united by our five core values: safety, environment, quality, innovation and performance. They are our cornerstones and define who we are, how we work, what we believe in and what we stand for.

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